





I.R. - 13      8 1/2 x 11



UMA INORNATA



# Uma inornata Testis Histology

<u>Figure No.</u>	<u>Stage</u>	<u>Lizard No.</u>	<u>Capture Date</u>	<u>Magnification</u>
6	1(normal)	165	10/20/59	620
7	1(abnormal)	308	3/16/61	400
8	3	177	3/10/60	620
9	4	169	3/10/60	620
10	5	310	3/16/61	620
11	6	195	4/28/60	620
12	7	223	6/12/60	620
13	7(late)	385	9/10/61	620
14	8	98	6/12/59	620
15	immature	102	6/12/59	620
16	non-breeding epididymis	339	8/15/60	635
17	portion of breeding epididymis	195	4/28/60	570
18	breeding epididymis	223	6/12/60	400







# U. inornata - Spermatogenic Condition

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1												
2												
3		2		3			1					
4				3	3			1				
5		3		4	5			1				
6				1	16	29	14	5	6			
7		4					4	1	5	4		
8					1	3	4	15	13	2		
9	1	5	2	6				1	2	5		
10												
N	1	6	2	17	24	30	22	10	29	19	7	

90

1												
2												
3				18			4					
4				18	12				3			
5				24	21				3			
6				6	67	97	64	50	21			
7							18	10	17	21		
8						3	14	40	52	68	29	
9	100	100	36						3	10	71	







Uma inornata Adult ♀♀ (70<sup>+</sup>mm. s-v) With Enlarged Eggs

1958

Left Testis

No.	Left ovary	Right ovary
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		



Uma Notata Adult ♀ (70mm. 2-v) With Enlarged Ovary

Right ovary

Left ovary

No.

1

2

3

4

5

6

7

8

9

10

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Uma inornata Testis Volumes (80+mm - -v)

1958

Left Testis

<u>Aug</u>	<u>Sept</u>	<u>Oct</u>
6	1	3
	1	15
	6	8
		32
		23
		17

Total Vol.	6	8	95
Mean	6	3	16
Range	—	1-6	3-32

Right Testis

11	2	3
	2	16
	3	11
		32
		21
		15

Total Vol.	11	7	98
Mean	11	2	16
Range	—	2-3	3-32

No. Lizards	1	3	6
-------------	---	---	---

N = 10

Largest ♂ =

Smallest ♂ =







Uma inornata Testis Volumes (80<sup>+</sup>mm S-V)

1959

Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
6	33	81	57	182	153	5	26	4	5		
			78	99	3	61	3	6			
			21	121	5	12	3	13			
			8	130			5	1			
			18	11			8				
			18	212			8				
			6				8				

No. Lizards	1	1	1	7	6	3	3	7	4	1	—
Total Vol.	6	33	81	326	764	161	18	61	4	5	—
Mean	6	33	81	47	126	54	26	7	6	5	—
Range	—	—	—	6-18	18-212	3-153	5-61	3-26	1-13	—	—

Right Testis

4	36	63	84	143	157	5	34	1	5		
			84	121	3	57	3	13			
			21	134	5	16	4	9			
			7	150			9	3			
			78	11			5				
			81	178			7				
			6				11				

Total Vol.	4	36	63	361	737	165	78	73	26	5	—
Mean	4	36	63	52	123	55	26	10	6	5	—
Range	—	—	—	6-83	11-178	3-157	5-57	3-34	1-13	—	—
No. Lizards	1	1	1	7	6	3	3	7	4	1	—

N = 34







Uma inornata Testis Volumes (80+mm S-V)

1960

Left Testis

<u>Jan.</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov.</u>	<u>Dec.</u>
		49	195	184	128	2	8	7	25		
		31	78	137	174	26	8	7			
		59	61	247	2	3	4	11			
		24	79	150	9		1	1			
		141	241	157	3		111	9			
			410	263	121		45	12			
				158	52		16	2			
				128	5		5				
				258			8				
				141			2				
							8				
							16				
							4				
							1				
							61				

Total Vol.	—	—	304	1072	1825	494	31	298	49	25	—	—
Mean	—	—	61	179	182	62	10	20	7	25	—	—
Range	—	—	24-141	69-410	128-263	2-174	2-26	1-111	1-12	—	—	—
No. lizards	—	—	5	6	10	8	3	15	7	1	—	—

N = 55



# 1917 May

Day	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

1917 May 1 - 1917 May 31  
 1917 May 1 - 1917 May 31  
 1917 May 1 - 1917 May 31  
 1917 May 1 - 1917 May 31



Uma inornata Testis Volumes (80+mm S-V)

1960

Right Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
		41	198	131	90	3	6	6	18		
		32	78	97	178	16	10	5			
		50	65	251	2	3	3	12			
		16	73	149	22		1	1			
		161	222	165	2		107	6			
			388	265	104		50	12			
				208	47		10	1			
				102	3		5				
				236			7				
				143			2				
							9				
							13				
							6				
							1				
							63				

Total Vol.	—	—	300	1024	1747	448	22	295	43	18	—	—
Mean	—	—	60	171	175	56	7	20	6	18	—	—
Range	—	—	16-161	65-388	97-265	2-178	3-16	1-107	1-12	—	—	—
No. Lizards	—	—	5	6	10	8	3	15	7	1	—	—

N=55







Uma inornata Testis Volumes (80+mm S-V)

1961

Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
	69	30	167	308	176	82	82	15	4		
		31	41	121	169	263	26	11	3		
		42	120	235	15	105	89	11	16		
		45	161	208		2	61	0	6		
		38	86	163		2	14	9			
		47	84	137							
		24	137	198							
		67	42	145							
		35	168	210							
Total Vol.	—	69	359	1008	1725	360	454	272	46	29	—
Mean	—	69	40	112	172	120	11	54	7	7	—
Range	—	—	24-67	4-168	121-308	15-176	2-263	14-89	0-15	3-16	—
No. Lizards	—	1	9	9	9	3	5	5	5	4	—

N = 50

May, 1961: Palm Springs Panorama (5 lizards) — Total vol. = 1035 mm<sup>3</sup>;  $\bar{X}$  = 207 mm<sup>3</sup>  
 1000 Palms (4 lizards) — " " = 690 "  $\bar{X}$  = 172 "  
 (17% difference between these animals)







Uma inornata Testis Volumes (50+mm S-V)

1961

Right Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
	69	27	147	303	185	70	94	14	3		
		32	47	99	181	203	14	13	3		
		44	89	263	14	104	99	9	12		
		47	131	181		2	50	0	7		
		33	64	128		1	16	8			
		52	61	128							
		24	112	191							
		73	35	151							
		42	141	217							
Total Vol.	—	69	374	827	1661	380	380	273	44	25	—
Mean	—	69	42	92	185	127	16	55	9	6	—
Range	—	—	24-73	35-147	19-303	14-185	1-203	14-99	0-14	3-12	—
No. Lizards	—	1	9	9	9	3	5	5	5	4	—

N = 50







N=40

Uma inornata Testis Volumes (80+mm S-V)

1962

Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
		78	272	198	144	1	108	23			
		66	244	255	105	13	120	52			
		198	137	324	79	17	67	22			
				18	15	8	93	9			
				328	38	61	55				
				188	161	123	3				
				139	141		1				
					159						
					115						
					60						

Total Vol.	—	—	342	653	1510	1017	223	447	106	—	—	—
Mean	—	—	114	218	216	102	37	64	26	—	—	—
Range	—	—	66-198	137-272	78-328	15-161	1-123	1-120	9-52	—	—	—

Right Testis

65	276	203	141	1	105	19
68	208	280	104	14	119	53
193	134	314	84	20	77	25
		75	18	8	86	7
		—	42	55	51	
		147	169	124	3	
		121	173		3	
			141			
			111			
			63			

Total Vol.	—	—	326	618	1140	1046	222	444	106	—	—	—
Mean	—	—	108	206	190	105	37	63	26	—	—	—
Range	—	—	65-193	134-276	75-314	17-113	1-124	5-119	7-53	—	—	—
No. Lizards	—	—	3	3	7	10	6	7	4	—	—	—





# Total Uma inornata Testis Volumes (80+mm S-V)

1958-1962

## Left Testis

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
Total Vol.	6	102	1086	3059	5814	2032	786	1084	233	154	—	—
Mean	6	51	60	122	182	85	46	31	10	13	—	—
Range	—	33-64	24-1986	6-410	11-328	2-176	1-263	1-120	0-52	3-25	—	—

## Right Testis

Total Vol.	4	105	1063	2830	5285	2039	702	1096	226	146	—	—
Mean	4	52	59	113	165	85	41	31	10	12	—	—
Range	—	36-69	16-193	6-388	11-314	2-185	1-203	1-119	0-53	3-32	—	—
No. lizards	1	2	18	25	32	24	17	35	23	12	—	—

N = 189





Uma inornata Left Testis Volume (May, 1959-1962)

(80+mm. S-V)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
182	33124	139	19321
99	9801	410	168100
121	14641		
130	16900		
11	121		
212	44944		
184	33856		
137	18769		
249	62001		
150	22500		
157	24649		
263	69169		
158	24964		
128	16384		
258	66564		
141	19881		
308	94864		
121	14641		
235	55225		
208	43264		
163	26569		
137	18769		
198	39204		
145	21025		
210	44100		
198	39204		
255	65025		
324	104976		
78	6084		
328	107584		
188	35344		

$$\Sigma X = 5814$$

$$\Sigma X^2 = 1,213,467$$

$$N = 32$$

$$\bar{X} = 182$$

$$\bar{X}^2 = 33124$$

$$\text{Range} = 11 - 410 \text{ mm}^3$$

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{1213467 - 32(33124)}{31}$$

$$s^2 = \frac{1213467 - 1059968}{31}$$

$$s^2 = \frac{153499}{31}$$

$$s^2 =$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{4952}{32}}$$

$$S.E. = \sqrt{155}$$

$$S.E. = 12.4$$





Uma inornata Right Testis Volume (May, 1959-1962)(80+ mm. S-U)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
143	20449	388	150544
121	14641		
134	17956		
150	22500		
11	121		
178	31684		
131	17161		
97	9409		
251	63001		
149	22201		
165	27225		
265	70225		
208	43264		
102	10404		
236	55696		
143	20449		
303	91809		
99	9801		
263	69169		
181	32761		
128	16384		
128	16384		
191	36481		
151	22801		
217	47089		
203	41209		
280	78400		
314	98596		
75	5625		
147	21609		
121	14641		

$$\Sigma X = 5285$$

$$\Sigma X^2 = 1,049,145$$

$$N = 31$$

$$\bar{X} = 165$$

$$\bar{X}^2 = 27225$$

$$\text{Range} = 11-388 \text{ mm}^3$$

$$S^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$S^2 = \frac{1049145 - 31(27225)}{30}$$

$$S^2 = \frac{1049145 - 843975}{30}$$

$$S^2 = \frac{205170}{30} = 6839$$

$$S.E. = \sqrt{\frac{S^2}{N}}$$

$$S.E. = \sqrt{\frac{6839}{31}}$$

$$S.E. = \sqrt{220}$$

$$S.E. = 15$$





Uma inornata Testis Volumes Combined (May, 1959-1962)  
(80+mm. S-V)

	<u>Left</u>	<u>Right</u>	<u>Total</u>
$\Sigma X$	5814	5285	11099
$\Sigma X^2$	1,213,467	1,049,145	2,262,612
$N$	32	31	63
$\bar{X}$	182	165	176
$\bar{X}^2$	33124	27225	30976

Range —: 11-410mm<sup>3</sup>    11-388    11-410

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{2,262,612 - 63(30976)}{62}$$

$$s^2 = \frac{2,262,612 - 1,951,488}{62}$$

$$s^2 = \frac{311124}{62}$$

$$s^2 = 5018$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{5018}{63}}$$

$$S.E. = \sqrt{80}$$

$$S.E. = 9$$





N=33

Uma inornata Testis Volumes (<62 mm L-V)

1959

Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
0.3		0.7	1.0	0.4	0.3	0.5	0.5	0.7	0.3	4.4	
		0.7	0.8	0.8	0.4	0.5	0.4	1.0			
				0.2	0.5	0.7	0.5				
				0.4	0.5	0.4	0.5				
				1.2	0.3		0.2				
							0.4				
							5.8				
							0.5				
							0.7				
							0.4				

Total Vol.	0.3	—	1.4	1.8	3.0	2.0	2.1	9.9	1.7	0.3	4.4	—
Mean	0.3	—	0.7	0.9	0.6	0.4	0.5	1.0	0.9	0.3	4.4	—
Range	—	—	0.7	0.8-1.0	0.2-1.2	0.3-0.5	0.4-0.7	0.2-5.8	0.7-1.0	—	—	—

Right Testis

0.3		0.7	2.3	0.5	0.4	0.5	0.4	0.7	0.4	4.3	
		0.7	0.8	0.9	0.7	0.5	0.2	0.7			
				0.2	0.3	1.0	0.5				
				0.5	0.5	0.4	0.5				
				1.4	0.3		0.5				
							0.5				
							6.4				
							0.3				
							0.7				
							0.5				

Total Volume	0.3	—	1.4	3.1	3.5	2.2	2.4	10.5	1.4	0.4	4.3	—
Mean	0.3	—	0.7	1.5	0.7	0.4	0.6	1.0	0.7	0.4	4.3	—
Range	—	—	0.7	0.8-2.3	0.2-1.4	0.3-0.7	0.4-1.0	0.2-6.4	0.7	—	—	—
No. Lizards	1	—	2	2	5	5	4	10	2	1	1	—





# Uma inornata Testis Volumes (<80 mm S-V)

1960

## Left Testis

Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec

9.2 0.8 2.2 4.6

5.4 85.0 (78mm)

1.4 95.0 (78mm)

Total Vol. 16.0 180.8 — 2.2 4.6 — — — —

Mean 5.3 60.2 — 2.2 4.6 — — — —

Range — — 1.4-7.2 0.8-75 — — — — —

## Right Testis

7.6 0.9 1.5 3.2

5.1 78.4

0.9 66.3

Total Vol. — — 13.6 145.8 — 1.5 3.2 — — —

Mean — — 4.3 48.5 — 1.5 3.2 — — —

Range — — 0.9-7.6 0.9-78 — — — — —

No. Lizards — — 3 3 — 1 1 — — —

N = 8

1962

## Left Testis

0.8

## Right Testis

0.8

N = 1





Uma inornata  
Differences in Testes Volumes

(80+mm S-V)

Left Testis Larger

|||||  
 |||||

(73)

(38%)

Right Testis Larger

|||||  
 |||||

(63)

(33%)

Testes Even

|||||  
 |||||

(55)

(29%)

N = 191

(<80mm S-V)

|||

(4)

N = 43

|

(1)

|||||

(38)



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Potentially Breeding Uma inornata ♂♂ (80+mm, S-V)

①

(smallest ♂ = 78 mm)  
(largest ♂ = 128 mm)

Total, 1958-1961

Date	# ♂	No ♂	Total	% ♂
Aug. '58	0	1	1	0
Sept.	0	3	3	0
Oct.	0	6	6	0
Jan. '59	0	1	1	0
Feb.	0	1	1	0
Mar.	0	1	1	0
Apr.	2	5	7	29
May	5	1	6	83
June	1	2	3	33
July	1	2	3	33
Aug.	1	6	7	14
Sept.	0	7	7	0
Oct.	0	1	1	0
Mar. '60	0	5	5	0
Apr.	7	0	7	100
May	10	0	10	100
June	4	4	8	50
July	1	2	3	33
Aug.	2	12	14	14
Sept.	0	7	7	0
Oct.	0	1	1	0
Feb. '61	0	1	1	0
Mar.	0	9	9	0
Apr.	2	7	9	22
May	8	1	9	89
June	2	1	3	67
July	3	2	5	60
Aug.	3	2	5	60
Sept.	0	5	5	0
Oct.	0	4	4	0

Month	# ♂	No ♂	Total	% ♂
Jan.	0	1	1	0
Feb.	0	2	2	0
Mar.	0	15	15	0
Apr.	13	9	22	59
May	23	2	25	92
June	7	7	14	50
July	4	7	11	36
Aug.	6	21	27	22
Sept.	0	19	19	0
Oct.	0	12	12	0
Total			148	





Potentially Breeding Uma inornata ♂♂ (80+mm S-V)

(2)

Totals, 1958-1962

<u>Date</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
Mar '62	0	3	3	0
Apr	3	0	3	100
May	7	0	7	100
June	5	5	10	50
July	2	4	6	33
Aug	5	2	7	70
Sept	0	4	4	0
Apr. '64	0	1	1	0

<u>Month</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
Jan	0	1	1	0
Feb	0	2	2	0
Mar	0	18	18	0
Apr	16	9	25	64
May	30	2	32	94
June	12	12	24	50
July	6	11	17	35
Aug	11	23	34	32
Sept	0	23	23	0
Oct	0	12	12	0
Total			188	





Uma inornata Immature (<80mm S-V)

Left testis anterior

Right testis anterior

Testes even



Uma inornata Adults (80+mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

|||||

(17)

Testes even





Uma inornata Adult ♂ (80+mm S-V)

	B	B1	B2	B3
Jan				
Feb				
Mar				
Apr				
May				
Jun				
Jul				
Aug				
Sep				
Oct				
Nov				
Dec				





Uma inornata Immature ♂

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec



H. unovata

Enlarged left tibia (30 mm)

- 1959 3/16 to 7/20  
1960 3/28 to 9/15 [52.44 mm]  
1961 2/5 to 9/9  
1962 3/28 to 9/9

Highly correlated syndymin (3)

- 1959 4/23 to 8/18  
1960 3/23 to 9/16  
1961 3/16 [1959-60 205] to 9/16  
1962 3/23 to 9/16

Enlarged tibia (3)

- 1959 4/29 to 9/18  
1960 3/24 to 9/15  
1961 4/9 to 9/10  
1962 4/24 to 9/9

Cor. with gale (4)

- 1959 4/29 to 8/18  
1960 4/24 to 9/11  
1961 4/9 to 9/16  
1962 4/24 to 9/9





Uma inornata ♀♀

Year      Ova Accumulate Yolk

1959

1960

1961

1962 Apr. 24, May 24, June 21, July 11, Aug. 8.

Ova Enlarge (> 5 mm dia.)

1959 May 29, June 12, July 29,

1960 Apr. 14, May 26, July 23, Aug. 11

1961 May 18, June 19, July 18, Aug. 14, Sept. 16

1962 Apr. 24, May 24, June 21, July 11, Aug. 8

Oviducts Convulsed

1959 June 12, July 20, Aug. 31, Sept. 9, Oct. 20

1960 Mar. 10, Apr. 14, May 26, June 12, July 23, Aug. 11, Sept. 16, Oct. 1

1961 Mar. 10, Apr. 1, May 18, June 17, July 18, Aug. 14, Sept. 16

1962 Mar. 28, Apr. 24, May 24, June 21, July 11, Aug. 8, Sept. 6

Eggs in Oviduct

1959 June 12

1960 June 12, July 23, Aug. 11

1961 June 17, July 18, Aug. 14

1962 Apr. 24, June 21, Aug. 8, Sept. 6

Corpora Lutea

1959 June 12

1960 June 12, July 23, Aug. 11, Sept. 16(?)

1961 June 19, July 18, Aug. 14, Sept. 16(?)

1962 Apr. 24, June 21, July 11, Aug. 8, 6 Sept.

Eggs in Oviduct and Enlarged Eggs in Ovary

2 ♀ with yellow eggs





Reproduction in ♀♀ Uma inornata (70+mm, S-V)

Date	Total ♀♀	Ova Accumulate Yolk	Ova enlarge (>5mm dia.)	oviducts convoluted + Walls thickened	Eggs in oviduct		corpora lutea
					# ♀	# eggs	
Aug. '58	###1	(6)					
Sept.	###	(8)					
Oct.	###1	(6)					
Mar. '59		(3)					
Apr.	###1	(6)					
May	###1	(6)	I				
June	### ###	(10)			I	2	I
July	### ###1	(11)	I	###			
Aug.	###	(9)		###			[1-?]
Sept.		(3)					[1-?]
Oct.	I	(1)		I			
Mar. 1960	###1	(6)					
Apr.	###1	(6)					
May	###	(7)	###		I	3	I
June		(2)			I	3	
July		(4)	I		I	2	I
Aug.	### ### ### ###1	(21)		### ### ### I	I	2	[1-?]
Sept.	### ### ### 	(18)		### ### ### 			[### ### ###?]
Oct.	I	(1)		I			
Mar. 1961		(4)					
Apr.		(2)					
May	###	(5)					
June	###	(5)		###	I	3	
July	###	(7)		###		2,2	
Aug.	###	(5)		###	I	2	I
Sept.	###	(8)	I	###			[1-?] I
Oct.	###1	(6)					



Reproduction in ♀♀ Uma inornata (70<sup>+</sup> mm, S-V) 2.

Date	Total ♀♀	Ova Accumulate Yolk	Ova enlarge (>5mm. dia.)	Oviducts convoluted + Walls thickened	Eggs in oviduct		Corpora lutea
					# ♀	# eggs	
Mar. 1962	" (2)			I		3	I
Apr.	" (2)						
May	I (1)	I	I	I			
June	### I (6)	"	I	###	III	3, 4, 3	III
July	### I (6)	III	I	### I			[III-?]
Aug.	### ### I (11)	III	III	### ### I	"	2, 2	III
Sept.	III (3)			III	I	2	###-? I[II-?]

Totals 207 33 16 39  
 Range 2-4  
 Mean 2.4

	<u>Total ♀♀</u>
Mar.	15
Apr.	16
May	19
June	23
July	28
Aug.	52
Sept.	40
Oct.	14
Total	207











Uma inornata  
SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm.

SIZE IN mm.

88 19.3 x 11.0 18.4 x 10.4

210 17.7 x 9.0 18.8 x 7.7

221 20.7 x 10.1

231 19.5 x 11.1

265 18.7 x 10.7

357 18.9 x 11.6

370 19.4 x 11.6

372 22.8 x 9.7

381 19.8 x 9.1

416 17.2 x 11.7 17.2 x 11.4

430 17.7 x 11.7

433 18.9 x 12.0 RUPTURED

440 16.5 x 12.0 16.3 x 11.7

458 20.0 x 10.0

464 18.6 x 10.6

473 18.5 x 9.6 17.8 x 10.7

20.1 x 8.3

18.3 x 10.1 20.5 x 11.1

21.2 x 10.8

18.7 x 10.3

18.5 x 13.9 19.6 x 12.0

19.8 x 11.6

24.1 x 10.0

20.0 x 10.4

20.8 x 11.8

18.1 x 12.3

18.8 x 11.4 18.7 x 11.6

18.2 x 12.0

19.3 x 12.8

20.8 x 10.0

$N = 21$

$\bar{X} = 18.7 \times 10.6 \text{ mm}$

Range = 16.3 x 7.7 mm - 22.8 x 12.0 mm

$N = 17$

$\bar{X} = 19.6 \times 11.2$

Range = 18.1 x 8.3 mm To 21.2 x 13.9 mm

$N = 38$

$\bar{X} = 19.1 \times 10.9 \text{ mm}$

Range = 16.3 x 7.7 mm To 22.8 x 13.9 mm



Uma inornata  
OVA WITH YOLK

LEFT OVARY

RIGHT OVARY

NUMBER OF OVA

1 ~~|||||~~

~~|||||~~

2 ~~|||||~~

~~|||||~~

3

1

4

5

6

7

8

9

10





Uma inornata Adult (70+ mm S-V)

No.	Left ovary	Right ovary
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		





Uma inornata Immature

No.	Left ovary	Right ovary
1		
2		
3	≡	≡
4	≡	≡
5	≡	≡
6	≡	≡
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		



Uma inornata Adult ♀ (70+ mm S-U)

B	B1	B2	B3
Jan			
Feb			
Mar II			
Apr I			I
May	I		
Jun II	III	I	
Jul II	IIII		
Aug III	<del>IIII</del> II	I	
Sep	III		
Oct			
Nov			
Dec			





Uma inornata  
FAT BODIES  
⑦

MONTH	ADULT		IMMATURE	
	♂ (80mm)	♀ (70mm.)	♂	♀
JANUARY	1			
FEBRUARY	2			
MARCH	III 23	III 15		
APRIL	IIII 30	IIII 17	I	
MAY	IIII 36	IIII 23	I	I
JUNE	IIII 31	IIII 28	II	II
JULY	IIII 22	IIII 27	I	
AUGUST	IIII 16	IIII 23	II	III
SEPTEMBER	IIII 26	IIII 20	I	I
OCTOBER	II 13	III 16 (190)		I
NOVEMBER	1			
DECEMBER				





# UMA INORNATA

1. Greatest difference between testis volumes, same animal;
2. Right testis always anterior to left in body,
3. 26/29 of animals, ~~left~~ right ovary anterior; 3/29, ovaries even
4. (Graph made for differences in testis volumes)
5. Time fat bodies present: ♂ -  
♀ -



UMA NOTATA

UMA NOTATA



Uma notata Testis Volumes (80+mm S-V)

1958

Left Testis

	<u>Aug</u>	<u>sep</u>	<u>Oct</u>	<u>Nov</u>
	4	11	3	10
	69		41	
Total Vol.	73	11	44	10
Mean	36	11	22	10
Range	4-69	-	3-41	-
No. lizards	2	1	2	1

Right Testis

	3	18	3	12
	81		41	
Total Vol.	84	18	44	12
Mean	42	18	22	12
Range	3-81	-	3-41	-
No. lizards	2	1	2	1

$N = 6$

Largest ♂ =

Smallest ♂ =



# Uma notata Testis Volumes (80<sup>+</sup>mm S-V)

1959

## Left Testis

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
			43	27	55	191	89	128	13	11	14	
			32	107	40	48	36	42	3			
			38	118	90	154	47	36	3			
				1		78		55	15			
				3				12	4			
								1				
								2				
Total Vol.	—	—	113	256	185	471	172	276	38	11	14	—
Mean	—	—	38	51	62	118	57	39	8	11	14	—
Range	—	—	32-43	1-118	40-90	48-191	36-89	1-128	2-15	—	—	—

## Right Testis

			45	25	51	203	97	145	18	14	16	
			31	171	51	52	14	75	3			
			38	124	124	173	45	51	3			
				2		96		79	14			
				3				13	5			
								2				
								3				
Total Vol.	—	—	114	325	226	524	156	368	43	14	16	—
Mean	—	—	38	65	75	131	52	53	9	14	16	—
Range	—	—	31-45	2-171	51-124	52-203	14-97	2-145	3-18	—	—	—
Vol. lizards	—	—	3	5	3	4	3	7	5	1	1	—

N=32





Uma notata Testis Volumes (80+mm S-V)1960Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
13	48	7	94	13	108	65	18	14			
18	58	3	236	102	3	22	13	7			
38	52	3	145	53	76	48	13	8			
16	30	13	111	146	98	8	13	4			
	30	89	246	111	120	91	7	16			
		109	137	60	92	63	2	7			
		137	111	63	57	53	10	5			
		28	169	111		39	3				
		109	76	42		9	13				
		32	246	33		78	2				
		42	98	133		53	4				
		145	88	102		30					
		198	171			57					
		158	76			85					
		26	105			15					
			134								
			116								
			153								
			117								
			115								
			141								
Total Vol.	—	85	218	1099	2935	969	554	711	48	61	—
Mean	—	21	44	73	140	81	79	47	9	9	—
Range	—	13-38	30-58	3-198	76-246	13-146	3-120	8-85	2-18	4-16	—
No. lizards	—	4	5	15	21	12	7	15	11	7	—

N=97



# Uma notata Testis Volumes (80+mm S-V)

1960

## Right Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
16	59	7	97	13	116	52	20	11			
22	57	3	222	107	3	35	18	11			
38	44	3	161	55	69	42	13	13			
16	34	4	122	131	97	13	10	4			
	38	67	242	134	107	94	9	21			
		94	134	71	96	146	3	7			
		134	104	61	63	30	10	5			
		50	237	97		45	4				
		108	91	50		8	10				
		26	251	30		89	1				
		38	101	118		55	6				
		121	118	107		42					
		205	193			63					
		143	72			45					
		24	111			15					
			157								
			105								
			128								
			118								
			162								
			158								

Total Vol.	—	92	232	1027	3084	974	551	174	104	72	—	—
Mean	—	23	46	68	147	81	79	52	9	10	—	—
Range	—	16-38	34-57	3-205	12-251	13-134	3-116	8-146	1-20	4-21	—	—
No. lizards	—	4	5	15	21	12	7	15	11	7	—	—

N = 97





# Uma notata Testis Volumes (80+mm SV)

1961

## Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
	24	40	121	57	81	102	17	3	2		
	11	5	113	81	51	143	86	7	6		
		38	124	7	10	96	3	5	7		
			149	171	80	81	38	5	3		
			111	182	57	85	3	13	3		
			57	179	25	81	44	1	3		
			101	193	82	13			6		
			16	120	149	57			4		
			15	11	105	65			5		
			42	139	174	105			2		
				42	137	101			6		
				44	53	22			6		
				63	226	12			2		
				40	105	48					
						6					
						82					
						78					
Total Vol.	—	34	83	850	1379	1395	1339	193	36	59	—
Mean	—	17	28	85	98	100	79	32	6	4	—
Range	—	11-23	5-40	15-149	7-193	25-226	8-143	3-86	1-13	2-8	—
No. lizards	—	2	3	10	14	14	17	6	6	13	—

N = 85



Uma notata Testis Volumes (80+mm S-U)

1961

Right Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
25	43	124	109	11	97	25	2	2			
12	4	97	111	61	162	69	15	5			
	38	143	9	66	154	3	5	6			
		137	141	112	102	36	5	4			
		102	150	57	93	4	11	3			
		57	128	25	84	39	1	3			
		118	178	67	89			8			
		13	104	162	52			7			
		16	13	131	72			4			
		41	141	121	64			2			
			34	153	118			6			
			77	51	24			8			
			57	236	96			3			
			37	111	52						
					5						
					73						
					87						

Total Vol.	—	37	85	848	1291	1444	1426	176	39	61	—	—
Mean	—	18	28	85	92	103	84	29	6	5	—	—
Range	—	12-25	4-43	13-143	9-178	25-236	5-162	3-69	1-15	2-8	—	—
No. lizards	—	2	3	10	14	14	17	6	6	13	—	—

N=85





# Uma notata Testis Volumes (80+ mm S-V)

1962

## Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
		55	105	107	168	61	59	7			
		51	124	157	198	63	60	11			
				190	108	78	78				
				198	88	61	67				
				190	+	90	63				
				128		+	58				
				55		76	42				
						67	59				
						88	20				
						55	32				
						105	13				
						13	13				
						15	51				
						12					
						118					
Total Vol.	—	—	106	229	1025	566	1092	695	18	—	—
Mean	—	—	53	114	146	111	73	53	9	—	—
Range	—	—	51-55	105-124	55-198	4-178	4-118	13-98	7-11	—	—
No. lizards	—	—	2	2	7	5	15	13	2	—	—

N = 46



Uma notata Testis Volumes (80+mm S-V)

1962

Right Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
		45	119	107	147	59	57	8			
		42	121	162	208	81	47	17			
				229	157	84	101				
				173	96	82	65				
				110	5	75	65				
				131		5	69				
				63		59	44				
						61	55				
						80	24				
						46	53				
						69	12				
						52	16				
						65	82				
						65					
						131					
Total Vol.	—	—	87	240	1055	613	1034	750	25	—	—
Mean	—	—	43	120	151	123	69	58	12	—	—
Range	—	—	42-45	119-121	63-229	5-208	5-131	16-101	8-17	—	—
No. lizards	—	—	2	2	7	5	15	13	2	—	—

N = 46





# Total Uma notata Testis Volumes (80 mm S-V)

1958-1962

## Left Testis

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
Total Vol.	—	119	520	2437	5524	3701	5157	1948	201	175	24	—
Mean	—	20	40	76	123	97	75	45	8	7	12	—
Range	—	11-38	5-58	1-198	7-246	4-226	3-173	1-128	1-18	2-41	10-14	—

## Right Testis

Total Vol.	—	129	518	2440	5656	3555	3167	2152	227	191	28	—
Mean	—	22	40	76	125	101	75	50	9	6	14	—
Range	—	12-38	4-59	2-205	9-251	5-236	3-162	2-176	1-20	2-41	12-16	—
No. lizards	—	6	13	32	45	35	42	43	25	23	2	—

N = 266



Uma notata Testis Volumes (< 80 mm S-V)

1958

Left Testis

<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
2.0	0.7	0.1
0.6	0.3	0.3
0.1	0.9	
5.8	2.0	
	1.0	
	2.7	

Total Vol.	8.5	7.6	0.4
Mean	2.1	1.3	0.2
Range	0.1-5.8	0.3-2.7	0.1-0.3

Right Testis

2.5	0.5	0.1
0.9	0.2	0.1
0.1	1.0	
6.3	1.7	
	1.2	
	2.9	

Total Vol.	9.8	7.5	0.2
Mean	2.4	1.2	0.1
Range	0.1-6.3	0.2-2.9	—
No. lizards	4	6	2

N = 12





# Uma notata Testis Volumes (< 80 mm S-V)

1959

## Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.7	0.6	0.7	0.5	0.5	2.0	3.9	0.2	2.5	2.0	0.4	
0.7	1.5	0.4	0.9	0.5	0.8	0.5	3.7	0.7	2.7	0.4	
1.0	1.2	0.7		1.4	1.5	1.4	2.2	0.8	1.2	0.8	
1.0	0.7	0.6		0.4	0.6	0.4	0.5	0.7	4.7	0.7	
	0.2	1.5		0.9			0.3	1.2	1.0	2.7	
		2.0		0.5			0.9	1.2	2.2	1.4	
		5.4		0.2			1.4	1.0	3.7		
							1.7	0.3	1.5		
							27.8	1.0	1.5		
								0.9	2.2		
									0.7		

Total Vol.	3.4	4.2	11.3	1.4	4.4	4.9	6.2	38.7	10.3	23.4	6.4	—
Mean	0.8	0.8	1.6	0.7	0.6	1.2	1.5	4.3	1.0	1.1	1.0	—
Range	0.7-1.0	0.2-1.5	0.4-5.4	0.5-0.9	0.2-1.4	0.6-2.0	0.4-3.9	0.2-27.8	0.3-2.5	0.7-4.7	0.4-2.7	—

## Right Testis

1.0	0.7	0.7	0.2	0.6	1.2	2.0	0.2	2.5	0.7	0.5	
0.7	1.5	0.4	0.6	0.5	0.7	0.5	1.0	1.4	5.8	0.5	
1.0	1.5	0.7		1.5	1.7	0.6	1.4	0.8	1.4	1.0	
1.0	0.6	0.9		0.3	0.6	0.5	0.2	0.7	2.7	0.6	
	0.2	1.5		0.7			0.4	1.4	1.0	3.4	
		3.1		0.5			0.9	1.2	2.9	1.0	
		7.9		0.2			0.9	0.7	3.3		
							1.2	0.4	1.0		
							24.6	1.2	1.0		
								1.2	2.7		
									0.9		

N=69

Total Vol.	3.7	4.5	15.2	0.8	4.3	4.2	3.6	30.8	11.5	23.4	7.0	—
Mean	0.9	0.9	2.2	0.4	0.6	1.0	0.9	3.4	1.1	1.1	1.1	—
Range	0.7-1.0	0.2-1.5	0.4-7.9	0.2-0.6	0.2-1.5	0.6-1.7	0.5-2.0	0.2-24.6	0.4-2.5	0.7-5.8	0.5-3.4	—
No. lizards	4	5	7	2	7	4	4	9	10	11	6	—



# Uma notata Testis Volumes (L80 mm S-V)

1960

## Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
	12.7	15.6	0.7		9.0	0.9	2.0	1.0	1.5		
	3.2		15.0		0.8	0.7	1.7	1.7			
	11.3		19.0			0.7	1.4	2.2			
	20.3		8.4			0.7		2.5			
								0.7			

Total Vol.	—	47.5	15.6	43.1	—	9.8	3.0	5.1	8.1	1.5	—	—
Mean	—	11.9	15.6	10.8	—	4.9	0.7	1.7	1.6	1.5	—	—
Range	—	3.2-20.3	—	0.7-19.0	—	0.8-9.0	0.7-0.9	1.4-2.0	0.7-2.5	—	—	—

## Right Testis

15.6	22.5	0.9		8.0	0.7	1.7	0.5	1.1
3.5		14.1		0.7	0.7	1.5	1.2	
2.5		12.7			0.5	1.1	1.4	
24.6		6.3			0.7		2.0	
							0.7	

Total Vol.	—	46.2	22.5	34.0	—	8.7	2.6	4.3	5.8	1.1	—	—
Mean	—	11.5	22.5	8.5	—	4.3	0.6	1.4	1.1	1.1	—	—
Range	—	2.5-24.6	—	0.9-14.1	—	0.7-8.0	0.5-0.7	1.1-1.7	0.5-2.0	—	—	—
No. lizards	—	4	1	4	—	2	4	3	5	1	—	—

N = 24





# Uma notata Testis Volumes (<80 mm S-V)

1961

## Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
		4.7				2.0	2.0	10.6	1.0		

44.2

5.4

Total Vol.	—	—	4.7	—	—	—	51.6	2.0	10.6	1.0	—	—
Mean	—	—	4.7	—	—	—	17.2	2.0	10.6	1.0	—	—
Range	—	—	—	—	—	—	2.0-44.2	—	—	—	—	—

## Right Testis

3.5

2.2 1.2 11.1 1.2

47.9

6.4

Total Vol.	—	—	3.5	—	—	—	56.5	1.2	11.1	1.2	—	—
Mean	—	—	3.5	—	—	—	18.8	1.2	11.1	1.2	—	—
Range	—	—	—	—	—	—	2.2-47.9	—	—	—	—	—
No. lizards	—	—	1	—	—	—	3	1	1	1	—	—

N = 7



Uma notata Testis Volumes (< 80 mm S-V)

1962

Left Testis

Jan   Feb   Mar   Apr   May   June   July   Aug   Sep   Oct   Nov   Dec

68.6   1.5   70.6   25.4   1.4   1.5

1.4

52.6

40.8

Total Vol.   —   —   —   163.4   1.5   10.6   25.4   1.4   1.5   —   —   —

Mean   —   —   —   40.8   1.5   10.6   25.4   1.4   1.5   —   —   —

Range   —   —   —   1.4-40.8   —   —   —   —   —   —   —   —

Right Testis

68.6   1.7   77.1   37.9   1.5   1.8

2.0

47.7

91.4

Total Vol.   —   —   —   209.9   1.7   17.1   37.9   1.5   1.8   —   —   —

Mean   —   —   —   52.5   1.7   17.1   37.9   1.5   1.8   —   —   —

Range   —   —   —   2.0-11.4   —   —   —   —   —   —   —   —

No. lizards   —   —   —   4   1   1   1   1   1   —   —   —

N = 9





Uma notata Adult ♂ (80+ mm S-V)

B

B1

B2

B3

Jan  
Feb  
Mar  
Apr  
May  
Jun  
Jul  
Aug  
Sep  
Oct  
Nov  
Dec

II (2)

I (1)

III (3)

II (2)

II (2)

I (1)

I (1)

III (3)

II (2)

III (3)

III (3)

II (2)



Uma notata Left Testis Volume (May, 1959-1962)  
(80+mm. S-V)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
55	3025	120	14400
40	1600	11	121
90	8100	139	19321
94	8836	42	1764
236	55696	94	8836
145	21025	63	3969
111	12321	40	1600
246	60516	107	11449
137	18769	157	24649
111	12321	190	36100
169	28561	198	39204
76	5776	190	36100
246	60516	128	16384
98	9604	55	3025
88	7744		
171	29241		
76	5776		
105	11025		
134	17956		
116	13456		
153	23409		
117	13689		
115	13225		
141	19881		
57	3249		
81	6561		
[7	49]		
171	29241		
182	33124		
179	32041		
193	37249		

$$\Sigma X = 5524$$

$$\Sigma X^2 = 820,504$$

$$N = 45$$

$$\bar{X} = 123$$

$$\bar{X}^2 = 15129$$

$$\text{Range} = 9 - 251 \text{ mm}^3$$

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{820504 - 45(15129)}{44}$$

$$s^2 = \frac{820504 - 680805}{44}$$

$$s^2 = \frac{139699}{44}$$

$$s^2 = 3175$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{3175}{45}}$$

$$S.E. = \sqrt{70}$$

$$S.E. = 8.4$$





# Uma notata Right Testis Volume (May, 1959-1962)

(80+ mm. S-V)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
51	2601	104	10816
51	2601	13	169
124	15376	141	19881
97	9409	34	1156
222	49284	77	5929
161	25921	57	3249
122	14884	39	1521
242	58564	107	11449
134	17956	162	26244
104	10816	229	52441
237	56169	173	29929
91	8281	190	36100
251	63001	131	17161
101	10201	63	3969
118	13924		
193	37249		
72	5184		
111	12321		
157	24649		
105	11025		
128	16384		
118	13924		
162	26244		
158	24964		
109	11881		
111	12321		
[9	81]		
141	19881		
150	22500		
128	16384		
178	31684		

$$\Sigma X = 5656$$

$$\Sigma X^2 = 865,678$$

$$N = 45$$

$$\bar{X} = 125$$

$$\bar{X}^2 = 15625$$

Range-: 9-251 mm<sup>3</sup>

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{865678 - 45(15625)}{44}$$

$$s^2 = \frac{865678 - 703125}{44}$$

$$s^2 = \frac{162553}{44} = 3694$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{3694}{45}}$$

$$S.E. = \sqrt{83}$$

$$S.E. = 9.1$$



Uma notata Testis Volumes Combined (May, 1959-1962)

(80+ mm. S-U)

	<u>Left</u>	<u>Right</u>	<u>Total</u>
$\Sigma X$	5524	5656	11180
$\Sigma X^2$	820,504	865,678	1,686,182
$N$	45	45	90
$\bar{X}$	123	125	124
$\bar{X}^2$	15129	15625	15376

Range—: 9-251 mm<sup>3</sup>    9-251    9-251

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{1,686,182 - 90(15376)}{89}$$

$$s^2 = \frac{1,686,182 - 1,383,840}{89}$$

$$s^2 = \frac{302342}{89}$$

$$s^2 = 3397$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{3397}{90}}$$

$$S.E. = \sqrt{38}$$

$$S.E. = 6.2$$





# Potentially Breeding Uma notata ♂♂ (20<sup>+</sup>mm, S-V)

①

(smallest ♂ = 79 mm)  
(largest ♂ = 121 " )

## Totals, 1958-1961

Date	#♂	No♂	Total	%♂
Aug. '58	0	2	2	0
Sept.	0	1	1	0
Oct.	0	2	2	0
Nov.	0	1	1	0
Mar. '59	0	4	4	0
Apr.	2	3	5	40
May	1	2	3	33
June	3	1	4	75
July	3	0	3	100
Aug.	5	2	7	71
Sept.	1	4	5	20
Oct.	0	1	1	0
Nov.	0	1	1	0
Feb. '60	0	4	4	0
Mar.	0	5	5	0
Apr.	7	4	11	64
May	21	0	21	100
June	9	3	12	75
July	6	1	7	86
Aug.	13	2	15	87
Sept.	6	5	11	54
Oct.	0	7	7	0
Feb. '61	0	2	2	0
Mar.	0	3	3	0
Apr.	5	5	10	50
May	10	4	14	71
June	12	2	14	86
July	16	1	17	94
Aug.	2	4	6	67
Sept.	1	5	6	17
Oct.	0	13	13	0

Month	#♀	No♀	Total	%♀
Feb.	0	6	6	0
Mar.	0	12	12	0
Apr.	14	16	30	47
May	32	6	38	84
June	22	8	30	73
July	25	2	27	93
Aug.	22	8	30	73
Sept.	8	15	23	35
Oct.	0	23	23	0
Nov.	0	2	2	0
Total			224	



Potentially Breeding *Uma notata* ♂♂ (80+mm S-V) ②

Totals, 1958-1962

Date	# ♂	N. ♂	Total	% ♂
Mar. '62	0	2	2	0
Apr.	1	1	2	50
May	7	0	7	100
June	4	1	5	80
{ July	13	2	15	87
{ July (slight)	11	2	15	(13)
{ Aug	13	0	13	100
{ Aug (slight)	11	0	13	(15)
Sep	0	2	2	0

Month	# ♂	N. ♂	Total	% ♂
Feb	0	6	6	0
Mar	0	14	14	0
Apr	15	17	32	47
May	39	6	45	87
June	26	9	35	74
{ July	38	4	42	90
{ July (slight)	11			(64)
{ Aug	35	8	43	81
{ Aug (slight)	11			(56)
Sep	8	17	25	32
Oct	0	23	23	0
Nov	0	2	2	0
Total			267	

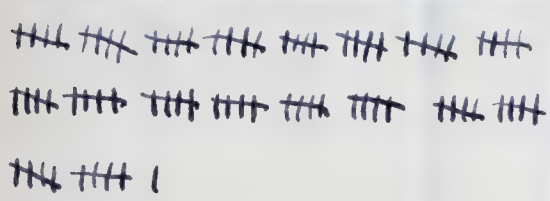

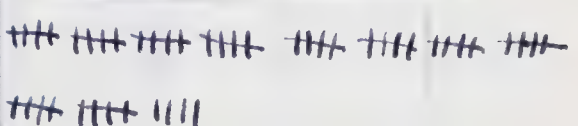






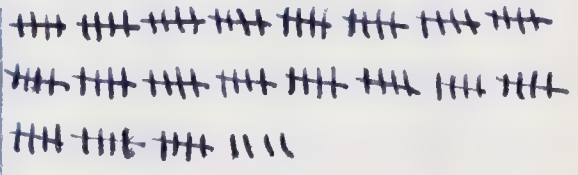
Uma notata

Differences in Testes Volumes

(80+ mm S-V)

Left Testis Larger	Right Testis Larger	Testes Even
		
(91)	(129)	(54)
(33%)	(47%)	(20%)
N=274		
Greatest diff. - mm <sup>3</sup>	Greatest diff. - mm <sup>3</sup>	

(<80 mm S-V)

		
(14)	(13)	(99)
(11%)	(10%)	(79%)
N=126		



Uma notata Immature ♂  
(Breeding Color)

B	B1	B2	B3
Jan			
Feb			
Mar			
Apr	"	"	
May	"	"	
Jun		"	
Jul		"	
Aug	"		
Sep	"		
Oct			
Nov			
Dec			





Uma notata ♀♀

Year                      Ova Accumulate Yolk

1959

1960

1961

1962 Apr. 14, May 13, June 13, July 14, Aug. 4

Ova Enlarge (> 5 mm. dia.)

1959 May ~~23~~<sup>1</sup>, June 11, July 20, Aug. 18

1960 Apr. 13, May 7, June 10, July 17

1961 May 14, June 7, July 11, Sept. 12

1962 Apr. 14, May 13, June 13, July 14, Aug. 4

Oviducts Convulsed

1959 July 20, Aug. 18, Sept. 11, Oct. 25, Nov. 15

1960 Feb. 16, Mar. 5, Apr. 13, May 10, June 10, July 17, Aug. 7, Sept. 10, Oct. 15

1961 Mar. 26, Apr. 10, May 14, June 7, July 11, Aug. 11, Sept. 12, Oct. 1

1962 Apr. 14, May 13, June 13, July 14, Aug. 10, Sept. 16

Eggs in Oviduct

1959 May 23, July 20, Aug. 18

1958 - Aug. 23

1960 May 10, June 10, July 16, Aug. 7

1961 May 14, June 7, July 11

1962 May 13, July 14, Aug. 4

Corpora Lutea

1959 May 23, July 20, Aug. 18, Sept. 4(?)

1958 - Aug. 23

1960 May 10, June 10, July 16, Aug. 7, Sept. 10

1961 May 14, June 7, July 11, Aug. 21(!)

1962 May 13, June 13, July 14, Aug. 4, Aug. 11(?), Sept. 16(?)



# Reproduction in ♀♀ Uma notata (70+ mm, S-V)

Date	Total ♀♀	Ova Accumulate Yolk	Ova enlarge (>5mm. dia.)	Oviducts convoluted + Walls thickened	Eggs in oviduct		Corpora lutea
					# ♀	# eggs	
Aug. 1958	" (2)			"	"	2,	"
Sept.	1 (1)						
Oct.	1 (1)						
Mar. 1959	" (3)						
Apr.	+++ (5)	1	1				
May	+++ (5)	1	1		III	2, 2, 3	III
June	" (2)	"	"				
July	+++ 1 (6)	1	1	III	1	2	" [1-?]
Aug.	+++ 11 (7)	"	"	III	1	1	1 [11-?]
Sept.	+++ 1111 (9)			+++			[111-?]
Oct.	" (2)			"			
Nov.	" (2)			"			
Feb. 1960	1 (1)			1			
Mar.	" (2)			1			
Apr.	+++ (5)	1	1	III			
May	+++ 1111 (9)	+++	1111	+++ 11	1	2	1
June	+++ 1111 (10)	+++ 1	111	+++ 11	111	3, 4, 2	1111
July	+++ 111 (8)	111	"	+++	1	2	1 [1-?]
Aug.	+++ 1 (6)			+++	1	2	1 [111-?]
Sept.	+++ 11 (7)			+++ 11			1 [+++ 1-?]
Oct.	+++ 1111 (13)			+++ 1111			
Mar. 1961	+++ (5)			111			
Apr.	+++ 1 (6)			+++ 1			
May	11 (17)	+++ 1111	+++ 1111 111	+++ 111	11	3, 2	11
June	+++ 111 (8)	+++ 11	+++ 11	+++ 111	1	2	1
July	+++ 1111 (9)	+++ 11	+++ 1	+++ 1111	1	1	" [11-?]
Aug.	1 (1)			1			[1-?]
Sept.	" (2)	1	1	1			
Oct.	+++ 1111 (14)			+++ 1111 1111			





# Reproduction in ♀♀ Uma notata (70+mm, S-U)

2.

Date	Total ♀♀	Ova Accumulated Yolk	Ova enlarge (>5mm. dia.)	Oviduct convoluted + Walls thickened	Eggs in oviduct		Corpora lutea
					# ♀	# eggs	
Apr. 1962	### III (8)	### I	I	### I			
May	### IIII (9)	###	IIII	### III	IIII	2,2,2,2	IIII
June	### IIII (9)	### II	### II	### IIII			III
July	### III (8)	II	II	### II	II	1,2	II
Aug.	### I (6)	II	II	### I	I	2	[II-?]
Sept.	### (5)			###			[IIII-?]
							[###-?]

Totals 213 24

Range

Mean

N=213

Total adult ♀♀	
Feb.	1
Mar.	10
Apr.	24
May	40
June	29
July	31
Aug.	22
Sept.	24
Oct.	30
Nov.	2
Total	213



Uma notata  
SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm.

76 21.5 x 11.3  
78 19.0 x 11.5  
85 17.5 x 11.0 18.0 x 12.0  
116 19.8 x 10.7  
137  
307 22.8 x 12.5  
316 20.8 x 11.5  
324 19.9 x 12.8 19.8 x 12.9  
329 21.5 x 12.1  
344 19.6 x 9.4  
373 20.1 x 9.9  
502 24.5 x 14.4 19.4 x 12.9  
512 19.1 x 11.0  
523  
554 22.3 x 12.6  
638 19.0 x 12.0  
639 19.6 x 11.0  
645 20.7 x 9.4  
647 18.5 x 10.8  
666 20.0 x 10.8  
667 20.1 x 13.0  
691 17.3 x 10.0

$N = 23$

$\bar{x} = 20.0 \times 11.5 \text{ mm.}$   
Range: 17.3 x 9.4 to 24.5 x 14.4 mm

Size of eggs laid

~~23.5 x 11.1 mm.; 1.71 gms.~~

~~22.3 x 11.1 mm.; 1.68 gms.~~

SIZE IN mm.

22.0 x 11.3  
20.0 x 11.5  
18.5 x 11.0  
23.0 x 11.0  
22.5 x 12.5  
18.8 x 16.2 19.2 x 12.1  
19.6 x 11.2 20.3 x 12.1  
20.6 x 12.9  
20.3 x 9.3  
20.3 x 9.8  
22.6 x 12.3  
20.7 x 11.7  
21.2 x 15.6 19.6 x 12.8  
22.3 x 11.4  
20.5 x 11.5  
20.6 x 10.5  
22.0 x 11.7  
21.5 x 10.0  
19.0 x 10.0

$N = 22$

$\bar{x} = 20.7 \times 11.5 \text{ mm.}$   
Range: 18.5 x 9.3 to 24.5 x 15.6 mm

$N = 45$

$\bar{x} = 20.14 \times 11.5 \text{ mm.}$   
Range: 17.3 x 9.3 to 24.5 x 15.6 mm





Uma notata Adult ♀ (70+ mm S-U)  
(Breeding Color)

B	B1	B2	B3
Jan			
Feb			
Mar			
Apr	III	I	
May	III		III
Jun		II	III
Jul		II	III
Aug			III
Sep	I	III	I
Oct			
Nov			
Dec			



# Uma notata

## Size of eggs laid

<u>mm</u>		<u># laid but not measured</u>	<u>wt. (gms)</u>
23.5 X 11.1	19.3 X 11.4	3	1.71
22.3 X 11.1	20.3 X 10.4	2	1.68
22.0 X 12.0	19.7 X 11.5	2	1.74
22.0 X 12.0	— —	1	1.55
22.0 X 13.0	21.8 X 11.6	2	1.52
24.0 X 13.0	22.1 X 10.1		
20.0 X 11.0	21.6 X 11.7		
22.0 X 12.0	22.0 X 12.4		
20.0 X 11.0			

2 corpora lutea  
in right ovary,  
none in left

17.5 X 11.0
18.0 X 12.0
18.0 X 11.0
19.0 X 12.0
18.0 X 12.0
21.0 X 13.0
22.0 X 12.0
18.5 X 13.0
22.0 X 11.0
20.0 X 10.0
18.0 X 11.0
19.0 X 10.0
20.0 X 11.0
21.0 X 12.0
21.0 X 13.0
19.0 X 12.5
18.2 X 10.4
17.9 X 11.5
18.7 X 11.5
19.0 X 10.6

$$N = 36$$

$$\bar{X} = 20.3 \times 11.5 \text{ mm.}$$

$$\text{Range} = 24.0 \times 13.0 \text{ to } 17.5 \times 10.0$$

<u>No. laid</u>	<u>(grouped)</u>	<u>%</u>
1	3	15
2	10	50
3	5	25
4	1	5
5	1	5

$$N = 20$$





Uma notata

EGGS IN OVIDUCT

LEFT

RIGHT

NO. of EGGS	0	1	2	3	4	5	6	7	8	9	10		0	1	2	3	4	5	6	7	8	9	10	
NO. of TAG		<del>76</del>												<del>76</del>										
76		✓												✓										
78		✓												✓										
85			✓											✓										
116		✓											✓											
137	✓													✓										
307		✓												✓										
316		✓													✓									
324			✓												✓									
329		✓												✓										
344		✓												✓										
373		✓												✓										
382			✓											✓										
512		✓												✓										
523	✓														✓									
554		✓											✓											
638		✓												✓										
639		✓												✓										
645		✓												✓										
647		✓												✓										
666		✓											✓											
667		✓												✓										
691		✓												✓										

N = 22

#	%
1-4	18
2-14	64
3-3	14
4-1	4

(graphed)



Animal No.	<u>Left side</u>		<u>Right side</u>	
	<u># eggs ovulated</u>	<u># C.L.</u>	<u># eggs ovulated</u>	<u># C.L.</u>
76	1	1	1	1
78	1	1	1	1
✓ 85	2	1	1	2
✓ 116	1	1	0	1
✓ 137	0	1	1	2
307	1	1	1	1
✓ 316	1	2	2	1
324	2	2	2	2
329	1	1	1	1
344	1	1	1	1
373	1	1	1	1
✓ 502	2	2	1	1
512	1	1	1	1
✓ 523	0	0	2	2
✓ 554	1	1	0	0
638	1	1	1	1
639	1	1	1	1
✓ 645	1	0	1	2
647	1	1	1	1
✓ 666	1	1	0	1
667	1	1	1	1
✓ 691	1	2	1	0

✓ = included in table

$N=22$

23% unequal count response. Extra

99% 1 <sup>th</sup> max C.L. when 5 or 6 in counts





# Uma notata Adult (70+ mm S-V)

(No. of ova)

No.	Left ovary	Right ovary
1	① 1/2%	① 1%
2	② 2%	② 1%
3	③ 1%	③ 1%
4	④ 1%	④ 2%
5	⑤ 5%	⑤ 17%
6	⑥ 23%	⑥ 3%
7	⑦ 29%	⑦ 28%
8	⑧ 20%	⑧ 26%
9	⑨ 12%	⑨ 14%
10	⑩ 5%	⑩ 7%
11	⑪ 1/2%	⑪ 3%
12	⑫ 1/2%	⑫ 1/2%
13		⑬ 1/2%
14		⑭ 1/2%
15		

combined

with in 2  
- graph

(combine two sides)

N = 215



Uma notata Immature  
(No. of ova)

No.	Left ovary	Right ovary
1	3 7%	2 2%
2	15 14%	12 11%
3	30 28%	32 30%
4	28 27%	27 26%
5	15 14%	23 22%
6	7 7%	7 7%
7	2 2%	1 1%
8	1 1%	1 1%
9		1 1%
10		
11		
12		
13		
14		
15		

N = 102

combined with  
red & in greyish





Uma notata  
OVA WITH YOLK

LEFT OVARY

RIGHT OVARY

NUMBER OF OVA

1		(55)	(75%)		(51)	(81%)
2		(4)	(7%)		(12)	(19%)
3						
4						
5						
6						
7						
8						
9						
10						



Uma notata Adults (80+ mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

(17)

Testes even

|||||

45

100%





Uma notata Immature (< 80mm S-V)

(15)  
Left testis anterior

(16)  
Right testis anterior

(17)  
Testes even

||||

(8)  
100%



Uma notata Immature ♀  
(Breeding Color)

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

||||

|





Uma notata  
FAT BODIES  
⑦

MONTH	ADULT		IMMATURE	
	(80+ ♂ mm.)	(70+ ♀ mm.)	♂	♀
JAN.	4	1		
FEBRU	15	7		
MAR	22	22		
APR.				
MAY				
JUN				
JUL				
AUG				
SEPT.				
OCT.				
NOV.	19			
DEC.	2			

pencil # 2  
of animals  
examined



1. Greatest difference between testis volumes, same animal:  $84 \text{ mm}^3$
2. Right testis always anterior to left in body.
3. Right ovary always anterior to left
4. (Graph made for difference in testis volumes)
5. Time fat bodies present: ♂ -  
♀ -





UIMA SCOPARIA

UMA SCOPARIA

# 11. Supra - you meteorological condition

	Tan	Feb	mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1												
2	1							1				
3			5				1	1		9	1	
4		1	1	1								
5				4	3	1		2				
6				23	42	16	3					
7						6	10	12	2	2		
8						3	12	17	4	1		
9					1			7	9	9		
0												
N	1	1	6	28	46	26	26	40	15	21		

90

1												
2	100	<del>100</del> 8						2.5				
3			83				4	2.5		43	100	
4		100		4								
5				14	6	4		5				
6				82	91	62	11					
7						23	38	30	13	10		
8						11	46	42	26	5		
9					3			18	60	43		





# Uma scoparia Testis Volumes (60+mm S-V)

1959

## Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
	75	38	3	117	111	24	9	5	28	28	
		30	132	80	7	17	13	7	29		
		131	169	79	116	3	10	6	28		
		81	13	123	141	3	11	10	20		
			154	208	4	52	13	11	22		
				118	104	13	7	2	8		
				135	63	8	8		36		
				158	125	21	4		42		
					55	25					

Total Vol.	—	75	280	471	1018	726	166	75	66	333	28	—
Mean	—	75	70	94	127	81	18	7	11	42	28	—
Range	—	—	30-131	3-169	79-208	4-141	3-52	4-13	2-11	8-42	—	—

## Right Testis

65	55	3	158	107	27	9	4	34	32
	30	161	72	10	16	13	9	25	
	121	135	55	104	4	6	7	16	
	66	13	124	113	5	16	25	24	
		150	238	5	42	14	11	17	
			104	81	18	6	3	7	
			157	50	7	8		24	
			149	168	20	4		38	
				52	25				

N = 59  
Largest ♂ =  
Smallest ♂ =

Total Vol.	—	65	272	462	1057	690	164	76	59	187	32	—
Mean	—	65	68	92	132	77	18	9	6	23	32	—
Range	—	—	50-121	3-161	55-238	5-168	4-42	4-16	3-25	9-38	—	—
No. lizards	—	1	4	5	8	9	9	8	6	8	1	—



# Uma Scepharia Testis Volume (80+mm SV)

1960

## Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
		67	159	356	157	42	3	18	20		
		98	235	210	233	24	8	13	31		
		73	230	233	137	53	33	10			
			361	452	135	117	10	14			
			309	371	174	124	38	7			
			222	348	247	159	11				
			363	354	416		16				
			188	339	247		33				
			421	241	246		1				
			361	371			12				
			356	388			28				
			469	379			10				
			169	512			21				
			356	188			7				
				301			16				
Total Vol,	—	—	238	4199	5043	1994	519	247	62	51	—
Mean	—	—	79	300	336	222	86	16	12	25	—
Range	—	—	67-98	159-469	188-512	135-416	24-159	1-38	7-18	20-31	—
No. lizards	—	—	3	14	15	9	6	15	5	2	—

N=69





# Uma scoparia Testis Volumes (80+mm S-V)

1960

## Right Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
		64	150	246	182	42	3	20	13		
		88	184	222	238	30	8	19	24		
		81	207	208	122	53	31	18			
			354	379	88	77	8	15			
			292	266	196	124	27	8			
			196	263	246	141	13				
			354	361	311		23				
			220	337	220		37				
			461	220	249		2				
			350	379			11				
			425	321			27				
			510	341			11				
			193	486			14				
			341	196			13				
				311			13				
Total Vol.	—	—	233	4237	4536	1882	469	241	80	37	—
Mean	—	—	77	302	302	209	78	16	16	18	—
Range	—	—	64-88	150-510	196-486	88-341	30-141	2-37	8-20	13-24	—
No. lizards	—	—	3	14	15	9	6	15	5	2	—

N = 69



Uma scoparia Testis Volumes (80+mm SV)

1961

Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
			109	90	13	9	10	7	8		
			111	184	3	4	8	8	7		
			75	174	66	55	10	12	27		
				206	85	13	7	35	20		
				105	91	28	16		13		
				169	42	7	19		8		
				222		7	13		5		
				212			20		7		
				158					27		
				109					15		
				157					4		
				13					15		
				146					41		
				127							
				158							
Total Vol.	—	—	—	295	2230	299	123	103	67	197	—
Mean	—	—	—	98	149	50	18	13	17	15	—
Range	—	—	—	75-111	13-222	3-91	4-55	7-20	7-35	4-41	—
No. lizards	—	—	—	3	15	6	7	8	4	13	—

N = 56





Uma scoparia Testis Volumes (80+mm S-V)

1961

Right Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
			102	110	38	8	8	7	10		
			96	113	4	5	8	11	8		
			82	131	61	52	29	15	21		
				154	89	16	8	42	21		
				91	96	27	16		24		
				118	99	10	19		13		
				157		7	11		6		
				150			26		7		
				127					20		
				89					13		
				184					5		
				15					12		
				118					34		
				89							
				120							

Total Vol.	—	—	—	280	1766	387	125	125	75	194	—	—
Mean	—	—	—	93	118	64	18	16	19	15	—	—
Range	—	—	—	82-102	<sup>15-</sup> <del>82</del> 184	4-99	5-52	8-29	7-42	5-34	—	—
No. lizards	—	—	—	3	15	6	7	8	4	13	—	—

N=56



Uma scoparia Testis Volume (80+mm S-V)

1962

Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
			71	223	92	6	2	6			
			198	153	235	1	7	21			
			229	220	3	2	4				
			158	193	128	5	6				
			128	193	3	2	8				
			121	179	96	1	1				
			35	261	3	10	8				
			60	252	51	7	5				
			179	288	62	20	15				
			119	149	57	41					
				92	78	47					
				47	111	2					
				115	111						
					102						
Total Vol.	—	—	—	1298	2365	1132	144	56	27	—	—
Mean	—	—	—	130	182	81	12	6	13	—	—
Range	—	—	—	35-229	47-288	3-235	1-47	1-15	6-21	—	—
No. lizards	—	—	—	10	13	14	12	9	2	—	—

N = 60



# Uma scoparia Testis Volumes (80<sup>+</sup>mm - V)

1962

## Right Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
			59	200	105	8	4	6			
			246	169	235	2	7	24			
			198	249	3	3	5				
			149	203	107	4	8				
			135	203	3	2	8				
			110	249	111	3	2				
			24	217	5	13	11				
			59	244	64	6	5				
			139	263	63	28	19				
			76	184	50	35					
				76	75	41					
				39	113	3					
				110	115						
					86						

Total Vol.	—	—	—	1215	2406	1135	148	69	30	—	—	—
Mean	—	—	—	121	185	81	12	8	15	—	—	—
Range	—	—	—	24-246	39-263	3-235	2-41	2-19	6-24	—	—	—
No. lizards	—	—	—	10	13	14	12	9	2	—	—	—

N = 60





Total Uta - coparia Testis Volume (80+mm - V)

1959-1962

Left Testis

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
Total Vol.	—	75	518	6263	10656	4151	952	481	222	581	28	—
Mean	—	75	74	196	209	109	28	12	13	25	28	—
Range	—	—	30-131	3-469	13-512	3-416	1-159	1-38	2-35	4-42	—	—

Right Testis

Total Vol.	—	65	505	6194	9765	4094	906	511	2444	418	32	—
Mean	—	65	72	194	191	108	27	13	14	18	32	—
Range	—	—	30-121	3-510	<del>15</del> 486	3-341	2-141	2-37	3-42	5-38	—	—
No. lizards	—	1	7	32	51	38	34	40	17	23	1	—

N = 244



# Uma scoparia Left Testis Volume (May, 1959-1962)

(80<sup>+</sup>mm. S-V)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
117	13689	158	24964
80	6400	109	11881
79	6241	157	24649
123	15129	13	169
208	43264	146	21316
118	13924	127	16129
135	18225	158	24964
158	24964	223	49729
356	126736	153	23409
210	44100	220	48400
233	54289	193	37249
452	204304	193	37249
371	137641	179	32041
348	121104	261	68121
354	125316	252	63504
339	114921	288	82944
241	58081	149	22201
371	137641	92	8464
388	150544	47	2209
379	143641	115	13225
512	262144		
188	35344		
301	90601		
90	8100		
184	33856		
174	30276		
206	42436		
105	11025		
169	28561		
222	49284		
212	44944		

$$\Sigma X = 10656$$

$$\Sigma X^2 = 2,809,542$$

$$N = 51$$

$$\bar{X} = 209$$

$$\bar{X}^2 = 43681$$

$$\text{Range} = 13 - 512 \text{ mm}^3$$

$$S^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$S^2 = \frac{2,809,542 - 51(43681)}{50}$$

$$S^2 = \frac{2809542 - 2227731}{50}$$

$$S^2 = \frac{581811}{50}$$

$$S^2 = 11636$$

$$S.E. = \sqrt{\frac{S^2}{N}}$$

$$S.E. = \sqrt{\frac{11636}{51}}$$

$$S.E. = \sqrt{228}$$

$$S.E. = 15.1$$





Uma scoparia Right Testis Volume (May, 1959-1962)

(80+mm. S-V)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
158	24964	127	16129
72	5184	89	7921
55	3025	184	33856
124	15376	15	225
238	56644	118	13924
104	10816	89	7921
157	24649	120	14400
149	22201	200	40000
246	60516	169	28561
222	49284	249	62001
208	43264	203	41209
379	143641	203	41209
266	70756	249	62001
263	69169	217	47089
361	130321	244	59536
337	113569	263	69169
220	48400	184	33856
379	143641	76	5776
321	103041	39	1521
341	116281	110	12100
486	236196		
196	38416		
311	96721		
110	12100		
113	12769		
131	17161		
154	23716		
91	8281		
118	13924		
157	24649		
150	22500		

$$\Sigma X = 9765$$

$$\Sigma X^2 = 2,359,579$$

$$N = 51$$

$$\bar{X} = 191$$

$$\bar{X}^2 = 36481$$

$$\text{Range} = 15 - 486 \text{ mm}^3$$

$$S^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$S^2 = \frac{2359579 - 51(36481)}{50}$$

$$S^2 = \frac{2359579 - 1860531}{50}$$

$$S^2 = \frac{499048}{50} = 9981$$

$$S.E. = \sqrt{\frac{S^2}{N}}$$

$$S.E. = \sqrt{\frac{9981}{51}}$$

$$S.E. = \sqrt{196}$$

$$S.E. = 14$$



Uma scoparia Testis Volumes Combined (May, 1959-1962)

(80<sup>+</sup> mm. S-V)

	<u>Left</u>	<u>Right</u>	<u>Total</u>
$\Sigma X$	10656	9765	20421
$\Sigma X^2$	2,809,542	2,359,579	5,169,121
$N$	51	51	102
$\bar{X}$	209	191	200
$\bar{X}^2$	43681	36481	40000

Range —: 13-512 mm<sup>3</sup>    15-486    13-512

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{5,169,121 - 102(40,000)}{101}$$

$$s^2 = \frac{5,169,121 - 4,080,000}{101}$$

$$s^2 = \frac{1,089,121}{101}$$

$$s^2 = 10783$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{10783}{102}}$$

$$S.E. = \sqrt{106}$$

$$S.E. = 10.3$$



# Uma scoparia Testis Volumes (L80mm S-U)

1959

## Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Oct (cont.)
0.7	0.2	1.5	0.5	0.7	0.5	0.9	0.7	0.5	1.2	2.2
	0.3	0.8	0.3	0.4	0.4	0.4	0.8		1.4	2.0
	0.8		0.4		0.4	1.4	0.4		1.8	5.8
	0.8		0.2		0.3	0.5	0.4		1.9	
					0.2	0.8	0.2		2.0	
						1.2	0.9		1.2	
						0.4	0.6		5.4	
						0.9			1.2	
									1.4	
									1.0	

Total Vol.	0.7	2.1	2.3	1.4	1.1	1.8	6.5	4.0	0.5	27.6
Mean	0.7	0.5	1.1	0.3	0.5	0.3	0.8	0.6	0.5	2.1
Range	—	0.2-0.8	0.8-1.5	0.2-0.5	0.4-0.7	0.2-0.5	0.4-1.4	0.2-0.9	—	1.0-5.8

## Right Testis

0.2	0.2	1.5	0.5	0.5	0.5	0.7	0.7	0.5	1.4	2.0
	0.3	0.8	0.3	0.4	0.2	0.5	1.8		1.5	2.0
	0.7		0.2		0.2	0.8	0.4		2.2	9.6
	0.8		0.3		0.2	0.5	0.5		0.5	
					0.4	0.5	0.2		1.4	
						1.8	0.9		0.7	
						0.4	0.5		5.4	
						0.5			0.8	
									1.4	
									1.4	

Total Vol.	0.2	2.0	2.3	1.3	0.9	1.5	5.7	5.0	0.5	30.5	N = 47
Mean	0.2	0.5	1.1	0.3	0.5	0.3	0.7	0.7	0.5	2.3	
Range	—	0.2-0.8	0.8-1.5	0.2-0.5	0.4-0.5	0.2-0.5	0.4-1.8	0.2-1.8	—	0.5-9.6	
No. lizards	1	4	2	4	2	5	8	7	1	13	





Uma scoparia Testis Volumes (<80+mm S-V)

1960

Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
------------	------------	------------	------------	------------	-------------	-------------	------------	-------------	------------	------------	------------

		9.0	0.4	7.6							
--	--	-----	-----	-----	--	--	--	--	--	--	--

		9.0									
--	--	-----	--	--	--	--	--	--	--	--	--

		33.2									
--	--	------	--	--	--	--	--	--	--	--	--

		5.4									
--	--	-----	--	--	--	--	--	--	--	--	--

Total Vol.	—	—	56.6	0.4	9.6	—	—	—	—	—	—
------------	---	---	------	-----	-----	---	---	---	---	---	---

Mean			14.1	0.4	7.6	—	—	—	—	—	—
------	--	--	------	-----	-----	---	---	---	---	---	---

Range			5.4-33.2	—	—	—	—	—	—	—	—
-------	--	--	----------	---	---	---	---	---	---	---	---

Right Testis

		9.6	0.5	7.1							
--	--	-----	-----	-----	--	--	--	--	--	--	--

		9.6									
--	--	-----	--	--	--	--	--	--	--	--	--

		24.6									
--	--	------	--	--	--	--	--	--	--	--	--

		7.1									
--	--	-----	--	--	--	--	--	--	--	--	--

Total Vol.	—	—	50.7	0.5	7.1	—	—	—	—	—	—
------------	---	---	------	-----	-----	---	---	---	---	---	---

Mean			12.7	0.5	7.1	—	—	—	—	—	—
------	--	--	------	-----	-----	---	---	---	---	---	---

Range			7.1-24.6	—	—	—	—	—	—	—	—
-------	--	--	----------	---	---	---	---	---	---	---	---

No. lizard	—	—	4	1	1	—	—	—	—	—	—
------------	---	---	---	---	---	---	---	---	---	---	---

IV = 6



Uma scoparia Testis Volumes (< 80 mm S-V)

1961

Left Testis

Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec

2.0 1.8 2.0  
2.0 2.5  
7.6  
7.1

Total Vol.	—	—	—	—	—	—	—	4.0	1.8	19.2	—	—
Mean	—	—	—	—	—	—	—	2.0	1.8	4.8	—	—
Range	—	—	—	—	—	—	—	—	—	2.0-7.6	—	—

Right Testis

2.2 1.8 2.0  
2.7 4.7  
7.1  
7.6

Total Vol.	—	—	—	—	—	—	—	4.9	1.8	21.4	—	—
Mean	—	—	—	—	—	—	—	2.4	1.8	5.3	—	—
Range	—	—	—	—	—	—	—	2.2-2.7	—	2.0-7.6	—	—
No. lizards	—	—	—	—	—	—	—	2	1	4	—	—

N = 7





Uma scoparia Testis Volumes (Columns V)

1962

Left Testis

Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec

0.5 6.6

3.2

Total Vol.	-	-	-	-	0.5	1.8	-	-	-	-	-	-
Mean	-	-	-	-	0.5	4.9	-	-	-	-	-	-
Range	-	-	-	-	-	3.2-6.6	-	-	-	-	-	-

Right Testis

0.7 5.4

2.5

Total Vol.	-	-	-	-	0.7	7.9	-	-	-	-	-	-
Mean	-	-	-	-	0.7	3.9	-	-	-	-	-	-
Range	-	-	-	-	-	2.5-5.4	-	-	-	-	-	-
No. lizards	-	-	-	-	1	2	-	-	-	-	-	-

N=3



# Uma scoparia

Difference in Testes Volume

(80+mm - V)

Left Testis Larger


(111)

(44%)

N=248

Right Testis Larger


(88)

(35%)

Testes Even

|||||  
|||||

(49)

(21%)

(80mm - V)

|||

(3)

N=66

||||

(4)

|||||  
|||||

(59)



Potentially Breeding ♂♂ Uma scoparia (80+mm, S-V) ①  
 (Smallest ♂ = 80 mm :- smallest caught at rt. time of yr.)  
 (largest ♂ = 113 " )

Totals, 1959-1961.

Date	# ♂	No ♂	Total	% ♂
Feb. '59	0	1	1	0
Mar.	0	4	4	0
Apr.	3	2	5	60
May	7	1	8	88
June	7	2	9	78
July	1	0	9	11
Aug.	0	8	8	0
Sept.	0	6	6	0
Oct.	0	8	8	0
Nov.	0	1	1	0
Mar. '60	0	3	3	0
Apr.	14	0	14	100
May	15	0	15	100
June	9	0	9	100
July	6	0	6	100
Aug.	0	15	15	0
Sept.	0	5	5	0
Oct.	0	2	2	0
Apr. '61	0	3	3	0
May	8	7	15	53
June	4	2	6	67
July	1	6	7	14
Aug.	0	8	8	0
Sept.	0	4	4	0
Oct.	0	13	13	0

Month	# ♂	No ♂	Total	% ♂
Feb.	0	1	1	0
Mar.	0	7	7	0
Apr.	17	5	22	77
May	30	8	38	79
June	20	4	24	83
July	8	14	22	36
Aug.	0	31	31	0
Sept.	0	15	15	0
Oct.	0	23	23	0
Nov.	0	1	1	0
			184	





# Potentially Breeding ♂♂ Uma scoparia (80+mm S-V)

②

## Totals, 1959-1962

<u>Date</u>	<u>#⑤</u>	<u>No⑧</u>	<u>Total</u>	<u>%⑧</u>
Apr. '62	7	3	10	70
May	12	1	13	92
June	11	3	14	80
July	3	9	12	25
Aug	0	9	9	0
Sept	0	2	2	0
May '63	1	0	1	100

<u>Month</u>	<u>#⑧</u>	<u>No⑤</u>	<u>Total</u>	<u>%⑧</u>
Feb	0	1	1	0
Mar	0	7	7	0
Apr	24	8	32	75
May	42	9	51	82
June	31	7	38	82
July	11	23	34	32
Aug	0	40	40	0
Sept	0	17	17	0
Oct	0	23	23	0
Nov	0	1	1	0
			<u>244</u>	



\_\_\_\_\_

16

17

Right testis anterior

Testes even

XXXXXXXXXXXX





Uma scoparia Immature (< 80 mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

(17)

Testes even

III



# Uma scoparia Adult ♂

	B	B1	B2	B3
Jan				
Feb				
Mar				
Apr				
May				
Jun				
Jul				
Aug				
Sep				
Oct				
Nov				
Dec				



Uma scoparia Immature ♂

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec





41 seepans

Enlarged left tubes (240 mm<sup>2</sup>)

1959 2/20 to 6/10  
1960 3/7 to 8/10  
1961 4/3 to 6/16  
1962 2/20 to 6/5  
1963 3/5 - 6/10

Height - 1000 ft. (240 mm<sup>2</sup>)

1959 4/24 to 6/10  
1960 4/11 to 6/10  
1961 4/11 to 6/10  
1962 4/24 to 6/17

240 mm<sup>2</sup> (240 mm<sup>2</sup>)

1959 4/24 to 6/10  
1960 4/11 to 6/10 [Aug 10 Drought]   
1961 4/11 to 6/10  
1962 4/24 to 6/17 [Aug 10 Drought]

For with yolk (240 mm<sup>2</sup>)

1959 5/22 to 6/10  
1960 4/11 to 8/10  
1961 6/16 to 8/15  
1962 4/23 to 7/17



Uma scoparia ♀♀

Year

Ova Accumulate Yolk

1959

1960

1961

1962 Apr. 23, May 6, June 5, July 17

Ova Enlarge (>5 mm. dia.)

1959 May 22, June 10

1960 Apr. 21, May 22, June 11, July 15

1961 June 16

1962 Apr. 23, May 6, June 5, July 17

Oviducts Convulsed

1959 June 10, July 21, Aug. 20, Sept. 10, Oct. 24

1960 Mar. 1, Apr. 21, May 22, June 11, July 15, Aug. 10, Sept. 11, Oct. 16

1961 Apr. 8, May 6, June 16, July 18, Aug. 15, Sept. 14, Oct. 12

1962 May 6, June 5, July 17, Aug. 10, Sept. 11

Eggs in Oviduct

1959 June 10

1960 May 22, June 11, July 15

1961 June 15

1962 June 5, July 17

Corpora Lutea

1959 June 10, July 22

1960 May 22, June 11, July 15, Aug. 10, Sept. 11(!)

1961 June 15

1962 June 5, July 17, Aug. 10(!), Sept. 11(!)

Eggs in Oviduct and Enlarged (yellow) Eggs in Ovary

1960 3 ♀ with yellow eggs; 6 ♀ with eggs >5 mm. diameter





# Reproduction in ♀♀ Uma scoparia (70+mm, S-V)

1.

Date	Total ♀♀	Ova Accumulate Yolk	Ova enlarge (>5mm. dia.)	Oviducts convoluted & Walls thickened	Eggs in oviduct		Corpora lutea.
					# ♀	# eggs	
Mar. 1959	11	(2)					
Apr.	+++	(5)					
May		(4)	11	1			
June		(4)	1	1	111	3, 2, 2	111
July	++++ 11	(12)	1	+++			1
Aug.	+++ 1111	(9)		1111			[1-?]
Sept.	+++ 111	(8)		+++ 11			
Oct.	+++	(5)		+++			[1-?]
Mar. 1960	11	(2)		1			
Apr.	+++	(5)	1111	1111	1111		
May	+++ 111 +++ 111	(18)	+++ 111 111	+++ 111 111	+++ 1	5, 4, 4, 3, 1	+++ 1
June	+++ 111 11	(12)	+++ 111	+++ 111	+++	3, 4 2, 5, 3, 5, 111	+++
July	+++ 111	(10)	+++	+++ 111	111	3 2, 2, 5, 3	111
Aug.	+++ 111 111	(13)		+++ 111 1		2-atrophied 1	[11-?] [1-?]
Sept.	+++ 111	(10)		+++ 111			[+++ 111-?]
Oct.	111	(3)		111			
Apr. 1961	1111	(4)		1111			
May	+++ 111 111	(15)		+++ 111 111			
June	+++ 111	(9)	1111	+++ 111	1	2	1
July	1111	(4)		1111			
Aug.	+++ 111	(8)	1	1			
Sept.	+++ 1	(6)		+++			
Oct.	+++ 11	(7)		111			
Apr. 1962	+++ 11	(7)	111	1			
May	+++ 1111 +++	(14)	+++ 111	+++ 11			
June	+++	(5)	111	111	11	4, 2	11
July	+++ 111 11	(12)	11	+++ 111 11	1	2	+++ [+++ -?]
Aug.	+++ 111 111	(13)		+++ 111 111			[+++ 111 -?]
Sept.	1111	(4)		1111			[111 -?]
Total		230				22	



Reproduction in Uma scoparia ♀♀ (70+mm, S-V) 2.

Total ♀♀ (ad)

Mar. 4

Apr. 21

May 51

June 30

July 38

Aug. 43

Sept. 28

Oct. 15

Total 230



Uma scoparia

# EGGS IN OVIDUCT

LEFT

RIGHT

NO. of EGGS	0	1	2	3	4	5	6	7	8	9	10		0	1	2	3	4	5	6	7	8	9	10	
NO. of TAG																								
67		✓												✓										
68		✓													✓									
69		✓												✓										
220*				✓											✓									
229		✓														✓								
230			✓												✓									
232		✓													✓									
244		✓													✓									
246			✓												✓									
257		✓												✓										
258			✓													✓								
260		✓													✓									
263		✓													✓									
268				✓											✓									
274		✓												✓										
277		✓												✓										
278			✓													✓								
283			✓											✓										
383		✓												✓										
507			✓												✓									
508		✓												✓										
526		✓												✓										

\*ABNORMAL





Uma scoparia

SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm.

67 19.3 x 12.0

68 17.4 x 11.0

69 21.6 x 13.8

220 <sup>Agony</sup> ~~mess~~

229 20.4 x 11.5

230 20.0 x 11.4 20.7 x 12.8

232 21.6 x 11.4

244 20.9 x 12.2

246 19.2 x 12.6 18.2 x 11.9

257 18.8 x 11.8

258 20.6 x 11.7 19.8 x 12.4

260 19.7 x 11.4

263 20.1 x 12.5

268 19.7 x 12.0 18.0 x 12.6 19.4 x 11.8

274 20.2 x 11.0

277 19.2 x 16.1

278 19.1 x 10.9 18.5 x 11.4

283 18.1 x 10.9 19.1 x 11.9

383 20.8 x 11.8

507 18.9 x 9.5 19.3 x 10.2

508 21.6 x 10.9

526 17.5 x 10.0

$N = 29$

$\bar{X} = 19.6 \times 11.6 \text{ mm}$

Range =

SIZE IN mm.

20.0 x 11.7

18.3 x 10.5 12.4 x 10.5

22.6 x 11.8

24.2 x 12.1 20.0 x 10.6

19.8 x 11.7 17.9 x 12.9 17.8 x 13.1

20.3 x 12.2 19.9 x 12.5

18.8 x 12.6 20.0 x 12.3

18.6 x 13.2 18.6 x 12.5

17.5 x 11.9 19.3 x 12.3

20.4 x 11.3

18.5 x 13.5 18.3 x 12.1 23.0 x 16.3

18.2 x 10.7 20.6 x 13.5

18.8 x 11.8 18.2 x 11.9

20.3 x 12.1 19.4 x 10.9

22.0 x 11.5

20.1 x 10.2

17.4 x 12.3 18.5 x 10.9 20.5 x 10.7

FELL OUT

21.0 x 11.0

18.9 x 10.5 18.3 x 10.3

22.5 x 10.9

18.3 x 9.8

$N = 37$

$\bar{X} = 19.6 \times 11.8 \text{ mm}$

Range =

$N = 66$

$\bar{X} = 19.6 \times 11.7 \text{ mm}$

Range = 17.4 x 9.5 mm to 24.2 x 16.3 mm



Uma scoparia  
OVA WITH YOLK

LEFT OVARY

RIGHT OVARY

NUMBER OF OVA

1 ~~|||||~~ ||

~~|||||~~ ||

2 ~~|||||~~ |

~~|||||~~ ||

3 ~~|||~~

|||

4

5

6

7

8

9

10





Uma scoparia Adult (70+ mm S-V)

No.	Left ovary	Right ovary
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		



Uma scoparia Immature

No.	Left ovary	Right ovary
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		



Uma scoparia Adult ♀ (70+ mm S-V)

B	B1	B2	B3
Jan			
Feb			
Mar			
Apr III	I		
May IIII	IIII	I	
Jun II		I	II
Jul	II	IIII	IIII
Aug	IIII	II	
Sep	III		
Oct			
Nov			
Dec			





Uma scoparia Immature ♀

7

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec



Uma scoparia  
FAT BODIES  
(7)

MONTH	ADULT		IMMATURE	
	♂ (80+mm)	♀ (70+mm)	♂	♀
JAN.				
FEB.				
MAR.	11	11	1111	11
APR.	111111 22	111111 21		
MAY	1111111111 11	111111111111111111 1		11
JUN.	1111111111 45	1111111111 31		1
JUL.	111111 42	111111 1	11	11
AUG.	111111 52	111111 22	11	1
SEPT.	111111 30	11111111 31	1	
OCT.	111111 22	111111 12	1111	11
NOV.	1	1		
DEC.				





## UMA SCOPARIA

1. Greatest difference between testis volumes, same animal;
2. Right testis always anterior to left in body,
3. 49/53 - ♀ with right ovary anterior, 4/53 - ovaries even
4. (Graph made for differences in testis volumes)
5. Time fat bodies present: ♂ -  
♀ -



Uma spp.

Uma spp.

May Testis Volumes, *Uma* spp., 1959-1962

①  
notata

$$S^2 = \frac{\sum X^2}{N} - (\bar{X})^2$$

$$S^2 = \frac{811340}{44} - (122)^2$$

$$S^2 = 18439 - 14884$$

$$S^2 = 3555$$

$$S.E. = \sqrt{\frac{S^2}{N}} = \sqrt{\frac{3555}{44}}$$

$$S.E. = \sqrt{88} = 9.4$$

~~S.E. x t value (1° freedom)~~

~~5% = 9.4 x~~

~~1% = 9.4 x~~

$$\bar{X} = 122 \pm 9.4$$

(141 - 103)

②  
inornata

$$S^2 = \frac{\sum X^2}{N} - (\bar{X})^2$$

$$S^2 = \frac{1381567}{33} - (189)^2$$

$$S^2 = 41866 - 35721$$

$$S^2 = 6145$$

$$S.E. = \sqrt{\frac{6145}{33}}$$

$$S.E. = \sqrt{186}$$

$$S.E. = 13.6$$

$$\bar{X} = 189 \pm 13.6$$

(162 - 216)

③  
scoparia

$$S^2 = \frac{\sum X^2}{N} - (\bar{X})^2$$

$$S^2 = \frac{2809542}{51} - (209)^2$$

$$S^2 = 55089 - 43681$$

$$S^2 = 11408$$

$$S.E. = \sqrt{\frac{11408}{51}}$$

$$S.E. = \sqrt{224}$$

$$S.E. = 15.0$$

$$\bar{X} = 209 \pm 15.0$$

(179 - 239)

t tests

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

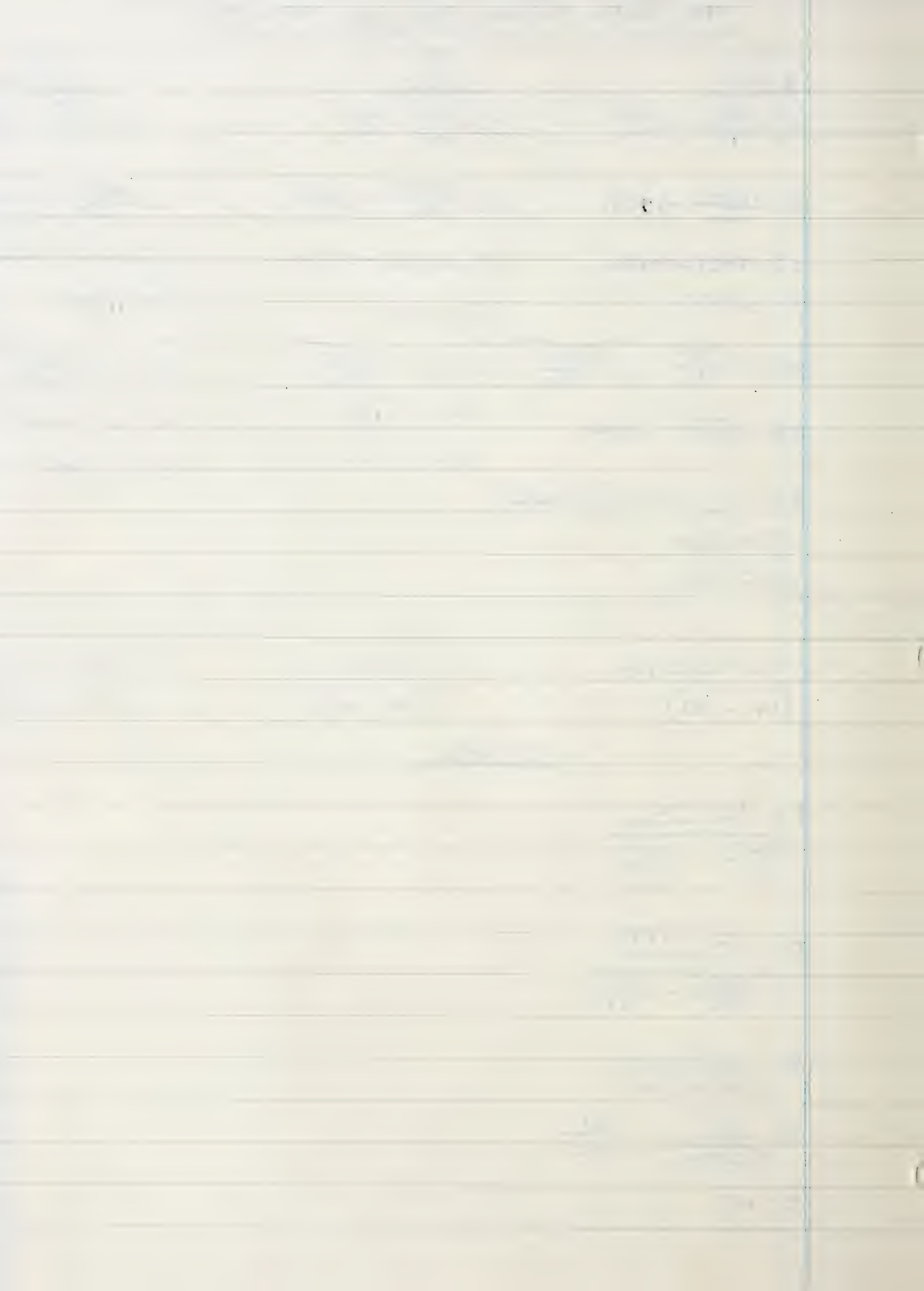
$$t = \frac{122 - 189}{\sqrt{\frac{3555}{44} + \frac{6145}{33}}}$$

$$t = \frac{67}{\sqrt{88 + 186}}$$

$$t = \frac{67}{\sqrt{274}} = \frac{67}{16.5}$$

$$t = 4.1$$





Uma spp. Summary  
(Dissected for Reproductive Data)

	<u>Ad ♂</u>	<u>Ad ♀</u>	<u>Total Ad.</u>	<u>Im ♂</u>	<u>Im ♀</u>	<u>Total Im.</u>	<u>Grand Total</u>
inornata	189	207	396				
notata	262	210	472				
scoparia	<u>244</u>	<u>230</u>	<u>474</u>	_____	_____	_____	_____
Total	695	647	1342				

	<u>Maximum S-V length(mm)</u>	<u>Maximum Testis volume(mm<sup>3</sup>)</u>
inornata	122	410
notata	121	251
scoparia	113	512

	<u>♂ 80-90 mm, S-V</u>	<u>♂ 91+ mm, S-V</u>
inornata		
notata	92	170
scoparia		

	<u>Smallest ♀ with enlarged eggs</u>	<u>Smallest ♀ with eggs in oviducts</u>
inornata	71 mm S-V	72 mm S-V
notata	" "	" "
scoparia	" "	" "



Uma spp., Potential Breeders, by Size (♂♂)

Uma notata

Month	<u>80-90mm(S-V)</u>				<u>91+mm(S-V)</u>			
	# ♂	No ♀	% ♂	Total	# ♂	No ♀	% ♂	Total
Apr.	2	11	15	13	12	1	92	13
May	7	5	58	12	25	1	96	26
June	8	4	67	12	16	2	89	18
July	7	2	78	9	18	0	100	18
Aug.	6	4	60	10	16	2	89	18
Sept.	2	7	22	9	6	7	46	13
Total				65				106

Uma inornata

Apr.	4	0	100	4	10	9	53	19
May	1	0	100	1	29	2	94	31
June	0	5	0	5	13	8	62	21
July	0	5	0	5	5	5	50	10
Aug.	1	5	20	6	9	18	33	27
Sept.	0	3	0	3	0	17	0	17
Total				24				125

Uma scoparia

Apr.	4	5	44	9	20	3	87	23
May	4	1	80	5	37	9	80	46
June	4	5	44	9	27	2	93	29
July	1	9	10	10	10	14	41	24
Aug.	0	9	0	9	0	31	0	31
Sept.	0	4	0	4	0	14	0	14
Total				46				167





Adult Uma spp. Testis Volumes (May) 1959-1962 (80+mm, S-V) 1.

<u>notata</u>				<u>inornata</u>				<u>scoparia</u>			
X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>
55	3025	193	37249	182	33124	328	107584	117	13689	212	44944
40	1600	120	14400	99	9801	188	35344	80	6400	158	24964
90	8100	11	121	121	14641	139	19321	79	6241	109	11881
94	8836	139	19321	130	16900	$\Sigma X = 6225$	$\Sigma X^2 = 1381,567$	123	15129	157	24649
236	55696	42	1764	11	121	$\bar{X} = 189$	$\bar{X}^2 = 41,866$	208	43264	13	169
145	21025	94	8836	212	44944	<u>Range</u>		118	13924	146	21316
111	12321	63	3969	184	33856	11-410		135	18225	127	16129
246	60516	40	1600	137	18769	N=33		158	24964	158	24964
137	18769	157	24649	249	62001	100=3		356	126736	223	49729
111	12321	190	36100	150	22500			210	44100	153	23409
169	28561	198	39204	157	24649			233	54289	220	48400
76	5776	190	36100	263	69169			452	204304	193	37249
251	63001	128	16384	158	24964			371	137641	193	37249
98	9604	55	3025	128	16384			348	121104	179	32041
88	7744	$\Sigma X = 5372$	$\Sigma X^2 = 811,340$	258	66564			354	125316	261	68121
171	29241	$\bar{X} = 122$	$\bar{X}^2 = 18,439$	141	19881			339	114921	252	63504
76	5776	<u>Range</u>		308	94864			241	58081	288	82944
105	11025	7-251		121	14641			371	137641	149	22201
134	17956	N=44		235	55225			388	150544	92	8464
116	13456	100=17		208	43264			379	143641	47	2209
153	23409			163	26569			512	262144	115	13225
117	13689			137	18769			188	35344	$\Sigma X = 10656$	$\Sigma X^2 = 2,809,542$
115	13225			198	39204			301	90601	$\bar{X} = 209$	$\bar{X}^2 = 55,089$
141	19881			145	21025			90	8100	<u>Range</u>	
57	3249			210	44100			184	33856	13-512	
81	6561			198	39204			174	30276	N=51	
7	49			255	65025			206	42436	100=6	
171	29241			324	104976			105	11025		
182	33124			78	6084			169	28561		
179	32041			410	168100			222	49284		



<u>notata</u>				<u>inornata</u>				<u>scoparia</u>			
<u>April</u>		<u>May</u>		<u>April</u>		<u>May</u>		<u>April</u>		<u>May</u>	
<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
7	49	94	8836	195	38025	184	33856	159	25281	356	126736
3	9	236	55696	78	6084	137	18769	235	55225	210	44100
3	9	145	21025	69	4761	249	62001	230	52900	233	54289
13	169	111	12321	79	6241	150	22500	361	130321	452	204304
89	7921	246	60516	241	58081	157	24649	309	95481	371	137641
109	11881	137	18769	410	168100	263	69169	222	49284	348	121104
137	18769	111	12321	$\Sigma X =$ 1072	$\Sigma X^2 =$ 281,292	158	24964	363	131769	354	125316
15	225	169	28561	$\bar{X} = 179$	$\bar{X}^2 = 46882$	128	16384	188	35344	339	114921
28	784	76	5776	$N = 6$		258	66564	421	177241	241	58081
109	11881	246	60516			141	19881	361	130321	371	137641
32	1024	98	9604			$\Sigma X =$ 1825	$\Sigma X^2 =$ 358,737	356	126736	388	150544
42	1764	88	7744			$\bar{X} = 183$	$\bar{X}^2 = 33589$	469	219961	379	143641
145	21025	171	29241			$N = 10$		169	28561	512	262144
198	39204	76	5776					356	126736	188	35344
158	24964	105	11025					$\Sigma X =$ 4199	$\Sigma X^2 =$ 1,385,161	301	90601
26	676	134	17956					$\bar{X} = 300$	$\bar{X}^2 = 98940$	$\Sigma X =$ 5043	$\Sigma X^2 =$ 1,806,407
$\Sigma X =$ 1114	$\Sigma X^2 =$ 140,354	116	13456					$N = 14$		$\bar{X} = 336$	$\bar{X}^2 = 120427$
$\bar{X} = 70$	$\bar{X}^2 = 8772$	153	23409							$N = 15$	
$N = 16$		117	13689								
		115	13225								
		141	19881								
		$\Sigma X =$ 2885	$\Sigma X^2 =$ 449,343								
		$\bar{X} = 137$	$\bar{X}^2 = 21397$								
		$N = 21$									

April + May  
 $\Sigma X = 3999$   
 $\bar{X} = 108$   
 $\Sigma X^2 = 589697$   
 $\bar{X}^2 = 15938$   
 $N = 37$

April + May  
 $N = 16$   
 $\Sigma X = 2897$   
 $\bar{X} = 181$   
 $\Sigma X^2 = 640029$   
 $\bar{X}^2 = 40002$

April + May  
 $N = 29$   
 $\Sigma X = 9242$   
 $\bar{X} = 319$   
 $\Sigma X^2 = 3191568$   
 $\bar{X}^2 = 110054$





# Adult Uma spp. Testis Volumes, April and May, Best year (80<sup>+</sup><sub>mm</sub>, <sup>3.</sup><sub>5-1</sub>)

<u>1962</u> <u>notata</u>	
<u>X</u>	<u>X<sup>2</sup></u>
105	11025
124	15376
157	24649
190	36100
198	39204
190	36100
128	16384
55	3025
<u>ΣX =</u>	<u>ΣX<sup>2</sup> =</u>
1147	181863
$\bar{X} = 143$	$\bar{X}^2 = 22733$
N = 8	

<u>1962</u> <u>inornata</u>	
<u>X</u>	<u>X<sup>2</sup></u>
272	73984
244	59536
137	18769
198	39204
255	65025
324	104976
78	6084
328	107584
188	35344
139	19321
<u>ΣX =</u>	<u>ΣX<sup>2</sup> =</u>
2163	529827
$\bar{X} = 216$	$\bar{X}^2 = 52983$
N = 10	

<u>1960</u> <u>scoparia</u>			
<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
159	25281	$\bar{X} = 319$	$\bar{X}^2 = 110054$
235	55225	N = 29	
230	52900		
361	130321		
309	95481		
222	49284		
363	131769		
188	35344		
421	177241		
361	130321		
356	126736		
469	219961		
169	28561		
356	126736		
356	126736		
210	44100		
233	54289		
452	204304		
371	137641		
348	121104		
354	125316		
339	114921		
241	58081		
371	137641		
388	150544		
379	143641		
512	262144		
188	35344		
301	90601		
<u>ΣX =</u>	<u>ΣX<sup>2</sup> =</u>		
9242	3191568		





# Adult Uma spp. Testis Volumes, May, Best Year (80<sup>+</sup>mm, 5-v)

4

1962

notata

X      X<sup>2</sup>

157 24649

190 36,100

198 39204

190 36,100

128 16384

55 3025

$\Sigma X =$        $\Sigma X^2 =$   
918      155462

$\bar{X} = 153$        $\bar{X}^2 = 25910$

N = 6

1962

inornata

X      X<sup>2</sup>

198 39204

255 65025

324 104976

78 6084

328 107584

188 35344

139 19321

$\Sigma X =$        $\Sigma X^2 =$   
1510      377538

$\bar{X} = 216$        $\bar{X}^2 = 53934$

N = 7

1960

scoparia

X      X<sup>2</sup>

356 126736

210 44100

233 54289

452 204304

371 137641

348 121104

354 125316

339 114921

241 58081

371 137641

388 150544

379 143641

512 262144

188 35344

301 90601

$\Sigma X =$        $\Sigma X^2 =$   
5043      1,806,407

$\bar{X} = 336$        $\bar{X}^2 = 120427$

N = 15



# Success of ♀♀ *Uma* spp. (Egg Production)

## *U. notata*

	Year	No. ♀♀	<u>Enlarged ova</u>		<u>Eggs in oviduct</u>		<u>Proportion Potential breeders</u>	
			<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
(Apr. - Aug.)	1959	25	7	28	5	20	12	48
	1960	38	10	26	6	16	16	42
	1961	43	27	63	4	9	31	72
	1962	40	16	40	7	18	23	58
	Total	146						

## *U. inornata*

(Apr. - Aug.)	1959	42	5	12	1	2	6	14
	1960	40	10	4	4	10	14	35
	1961	24	12	50	4	17	16	67
	1962	29	6	21	7	24	13	45
	Total	135						

## *U. scoparia*

(Apr. - July)	1959	25	2	8	3	12	5	20
	1960	45	32	71	15	33	45(47)	100
	1961	32	4	12	1	3	5	15
	1962	38	12	32	3	8	15	40
	Total	140						





Juvenile *Uma* spp. Seen

*U. inornata*

<u>Year</u>	<u>Months Seen</u>	<u>Approx. number</u>
1959	July thru Oct.	few, few, 1, 4
1960	July thru Oct.	5, 6, 3, fairly abundant
1961	Aug., Oct.	3, few
1962	Aug.	few

*U. notata*

1958	Aug. thru Dec.	lots
1959	Sept., Oct.	lots (too many to count)
1960	Aug. thru Oct.	lots
1961	Aug. thru Oct.	lots
1962	July thru Sept.	1, 1, lots

*U. scoparia*

1959	Sept., Oct.	5, 4
1960	July thru Oct.	lots (36 caught)
1961	Oct.	1 (very scarce)
1962	Sept.	3 seen (scarce)



Uma inornata Adult ♀ (70<sup>+</sup>mm. S-U)

19

Left ovary anterior

18

Right ovary anterior

20

Ovaries even

||||| ||| ||| |||

111



Uma notata Adult ♀ (70<sup>+</sup> mm. S-V)

(19) LEFT OVARY ANTERIOR	(18) RIGHT OVARY ANTERIOR	(20) OVARIES EVEN
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Uma scoparia Adult ♀ (70<sup>+</sup> mm. S-V)

(19) LEFT OVARY ANTERIOR	(18) RIGHT OVARY ANTERIOR	(20) OVARIES EVEN
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UROSAURUS GRACIOSA

DIOSAURUS GRACIOSA



## UROSAURUS

## GRACIOSUS

## TOTAL COLLECTED

MONTHIMMAD

♂

♀

TOTAL

♂

♀

TOTAL

JAN

-

-

-

-

-

-

FEB

-

1

1

5

1

6

MAR

1

1

2

24

11

35

APR

5

2

7

52

47

99

MAY

3

1

4

32

32

64

JUN

1

1

2

25

23

48

JUL

1

2

3

20

26

46

AUG

1

1

2

24

18

42

SEP

-

1

1

37

27

64

OCT

-

2

2

9

9

18

NOV

-

-

-

1

2

3

DEC

-

-

-

1

-

1

12

12

24

230

196

426

TOTALS



UROSAURUS GRACIOSUS REPRODUCTION CHART

MALE

ENLARGED TESTIS ( $> 20 \text{ mm}^3$ )

1959 3/21 - 8/17

1960 2/16 - 8/19

1961 3/5 - 8/21

1962 4/14 - 8/10

2/14 - 8/21

CONVOLUTED EPIDIDYMISS

1959 4/25 - 8/31

1960 4/13 - 8/19

1961 3/26 - 7/12

1962 4/14 - 8/11

3/25 (64) - 7/12

MOTILE SPERM

1959 4/25 - 8/31

1960 4/13 - 8/19

1961 4/14 - 7/12

1962 5/16 - 6/14 (⊕ on 4/14)

4/15 (63) - 7/12

FEMALE

OVA ACCUMULATED YOLK

1959 ~~3/27~~ - 8/20

1960 4/13 - 7/16

1961 5/14 - 8/21

1962 4/14 - 8/11

~~3/27 - 8/21~~

4/13 - 8/21 OK



U. S. (CONT.)

ENLARGED EGGS (> 3 mm.)

1959 5/23 - 8/20  
1960 5/13 - 7/16  
1961 5/14 - 8/12  
1962 4/14 - 8/11  
4/11 (64) - 8/21

CONVOLUTED OVIDUCTS

1959 3/21 - 11/15  
1960 2/16 - 10/12  
1961 3/26 - 10/11  
1962 4/14 - 11/15  
2/16 - 11/15

EGGS IN OVIDUCTS

1959 8/19  
1960 4/30 - 4/11  
1961 5/14 - 8/12  
1962 5/12 - 1/11  
4/30 - 8/11

CORPORA LUTEA

1959 8/19  
1960 4/30 - 7/11  
1961 5/14 - 7/12  
1962 5/12 - 7/12  
4/30 - 7/12





Potential Breeders, Urosaurus graciosa ♂♂ (45+ mm, S-V)

①

(smallest ♂ = 42 mm)

(largest ♂ = 68 " )

Totals, 1958-1961

<u>Date</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
Aug. '58	2	0	2	100
Sept.			0	
Oct.	0	2	2	0
Nov.			0	
Dec.	0	1	1	0
Mar. '59	0	5	5	0
Apr.	3	4	7	43
May			0	
June	3	1	4	75
July			0	
Aug.	7	2	9	78
Sept.	0	9	9	0
Oct.			0	
Nov.	0	1	1	0
Feb. '60	0	5	5	0
Mar.	0	11	11	0
Apr.	7	0	7	100
May	4	0	4	100
June	3	1	4	75
July	4	1	5	80
Aug.	2	0	2	100
Sept.	0	4	4	0
Oct.	0	1	1	0
Mar. '61	0	6	6	0
Apr.	2	0	2	100
May	18	0	18	100
June	9	0	9	100
July	4	0	4	100
Aug.	5	0	5	100
Sept.	0	9	9	0
Oct.	0	3	3	0

<u>Month</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
Feb.	0	5	5	0
Mar.	0	22	22	0
Apr.	12	4	16	75
May	22	0	22	100
June	15	2	17	88
July	8	1	9	89
Aug.	16	2	18	89
Sept.	0	22	22	0
Oct.	0	6	6	0
Nov.	0	1	1	0
Dec.	0	1	1	0
Total			139	

Table 1. The results of the analysis of variance for the effect of the treatment on the growth of the fish.					Table 2. The results of the analysis of variance for the effect of the treatment on the survival of the fish.				
Treatment	Mean	Standard deviation	Standard error	Significance	Treatment	Mean	Standard deviation	Standard error	Significance
Control	1.2	0.3	0.1	0.05	Control	95	5	1	0.01
T1	1.5	0.4	0.1	0.05	T1	90	10	2	0.05
T2	1.8	0.5	0.1	0.05	T2	85	15	3	0.01
T3	2.1	0.6	0.1	0.05	T3	80	20	4	0.01
T4	2.4	0.7	0.1	0.05	T4	75	25	5	0.01
T5	2.7	0.8	0.1	0.05	T5	70	30	6	0.01
T6	3.0	0.9	0.1	0.05	T6	65	35	7	0.01
T7	3.3	1.0	0.1	0.05	T7	60	40	8	0.01
T8	3.6	1.1	0.1	0.05	T8	55	45	9	0.01
T9	3.9	1.2	0.1	0.05	T9	50	50	10	0.01
T10	4.2	1.3	0.1	0.05	T10	45	55	11	0.01
T11	4.5	1.4	0.1	0.05	T11	40	60	12	0.01
T12	4.8	1.5	0.1	0.05	T12	35	65	13	0.01
T13	5.1	1.6	0.1	0.05	T13	30	70	14	0.01
T14	5.4	1.7	0.1	0.05	T14	25	75	15	0.01
T15	5.7	1.8	0.1	0.05	T15	20	80	16	0.01
T16	6.0	1.9	0.1	0.05	T16	15	85	17	0.01
T17	6.3	2.0	0.1	0.05	T17	10	90	18	0.01
T18	6.6	2.1	0.1	0.05	T18	5	95	19	0.01
T19	6.9	2.2	0.1	0.05	T19	0	100	20	0.01
T20	7.2	2.3	0.1	0.05					

# Potential Breeders, Urosaurus graciosa (45<sup>+</sup>mm - V)

②

## Totals, 1958-1962

Date	# ⑤	No ⑤	Total	% ⑤
Apr. '62	9	6	15	60
May	7	0	7	100
June	4	1	5	80
July	7	4	11	64
Aug.	4	2	6	67
Sept.	0	10	10	0
Apr. '63	7	<del>3</del>	10	<del>70</del>
May	2	0	2	100
June	2	0	2	100
Mar.	0	2	2	0
Apr. '64	9	3	12	75
Sep.	4	1	5	80
Oct.	0	3	3	0

Month	# ⑤	No ⑤	Total	% ⑤
Feb	0	5	5	0
Mar	0	22	22	0
Apr	21	10	31	68
May	29	0	29	100
June	19	3	22	86
July	15	5	20	75
Aug	20	4	24	83
Sept	0	32	32	0
Oct	0	6	6	0
Nov	0	1	1	0
Dec	0	1	1	0
Total			193	

## Totals, 1958-1964

Month	# ⑤	No ⑤	Total	% ⑤
Feb	0	5	5	0
Mar	0	24	24	0
Apr	37	16	53	70
May				
Jun				
Jul				
Aug				
Sep	4	33	37	10
Oct				
Nov				
Dec				

## Totals, 1958-1963

Month	# ⑤	No ⑤	Total	% ⑤
Feb.	0	5	5	0
Mar	0	<del>24</del>	<del>24</del>	0
Apr	28	13	41	68
May	31	0	31	100
Jun	21	3	24	88
Jul.	15	5	20	75
Aug	20	4	24	83
Sep	0	32	32	0
Oct.	0	6	6	0
Nov	0	1	1	0
Dec	0	1	1	0
			209	





# Potential Breeders, Urosaurus graciosa st (Glams) (45 mm - v) ①

## Totals, 1958-1962

<u>Date</u>	<u>#</u> ②	<u>No</u> ③	<u>Total</u>	<u>%</u> ④
Oct. '58	0	2	2	0
Nov.			0	
Dec.	0	1	1	0
Mar. '59	0	5	5	0
Apr	3	3	6	50
May			0	
June	3	0	3	100
July			0	
Aug	2	0	2	100
Sept		6	6	0
Oct			0	
Nov	0	1	1	0
Feb '60	0	5	5	0
Mar	0	11	11	0
Apr	2	0	2	100
May	2	0	2	100
June	3	1	4	75
July	2	1	3	67
Aug	2	0	2	100
Sept	0	4	4	0
Oct.	0	1	1	0
Mar. '61	0	6	6	0
Apr	1	0	1	100
May	17	0	17	100
June	6	0	6	100
July	3	0	3	100
Aug	5	0	5	100
Sept	0	7	7	0
Oct	0	3	3	0

<u>Month</u>	<u>#</u> ②	<u>No</u> ③	<u>Total</u>	<u>%</u> ④
Feb	0	5	5	0
Mar	0	22	22	0
Apr	15	9	24	62
May	23	0	23	100
June	15	2	17	88
July	10	4	14	71
Aug	13	2	15	87
Sept	0	27	27	0
Oct	0	6	6	0
Nov	0	1	1	0
Dec	0	1	1	0
Total			155	



# Potential Breeders, Urosaurus grasiosa ♂♂ (Glamis) (45 mm SV) ②

<u>Date</u>	<u>#</u> ②	<u>No</u> ⑤	<u>Total</u>	<u>%</u> ⑤
Apr. '62	9	6	15	60
May	4	0	4	100
June	3	1	4	75
July	5	3	8	63
Aug	4	2	6	67
Sept	0	10	10	0
Apr. '63	7	3	10	70
May	2	0	2	100
June	2	0	2	100
Mar. '64	0	2	2	0
Apr.	9	2	11	82



Urosaurus graciosa Testis Volumes (15<sup>+</sup> mm S-V)

1958

Left Testis

AUG SEPT OCT NOV DEC

11 — 3 — 11

11 10

TOTAL VOL 22 0 13 0 11

MEAN 11.0 0 ~~6.5~~ 0 11

RANGE — 0 3-10 0 —

NO. LIZARDS 2 0 2 0 1

Right Testis

AUG SEPT OCT NOV DEC

9 — 4 — 10

8 8

TOTAL VOL 17 0 12 0 10

MEAN 8.5 0 6.0 0 10

RANGE 8-9 0 4-8 0 —

NO. LIZARDS 2 0 2 0 1

Glams = total in Oct., Dec.



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1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

Handwritten text, possibly a signature or note.

Handwritten header 1	Handwritten header 2	Handwritten header 3	Handwritten header 4
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

# *Urosaurus* *graciosa* Testis Volumes (45<sup>+</sup>mm S-V)

1959 Total

*Left Testis*

(total = Glans in Mar., Nov.)

MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV
24	8	—	8	—	14	1	—	10
10	19		14		23	2		
38	23		15		3	3		
25	17		18		12	2		
19	7				2	4		
	30				3	4		
	16				3	2		
					8	1		
					3	3		

TOTAL VOL	116	120	0	55	0	71	22	0	10
MEAN	23.2	17.1	0	13.8	0	7.9	2.4	0	10
RANGE	10-38	7-30	0	8-18	0	2-23	1-4	0	—
NO. LIZARDS	5	7	0	4	0	9	9	0	1

*Right Testis*

MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV
24	8	—	6	—	8	1	—	8
6	13		14		16	3		
30	18		16		3	3		
22	19		17		12	4		
30	9				2	4		
	28				3	4		
	16				3	4		
					4	1		
					3	5		

TOTAL VOL	112	111	0	53	0	54	29	0	8
MEAN	22.4	15.9	0	13.3	0	6.0	3.2	0	8
RANGE	6-30	8-28	0	6-17	0	2-16	1-5	0	—
NO. LIZARDS	5	7	0	4	0	9	9	0	1



Iltosaurus graciosus Testis Volume (45+ mm S-V)  
1959 (Glamis Only)

Mar	Apr	May	<u>Left testis</u>		Aug	Sep	Oct	Nov
			<u>Jun</u>	<u>Jul</u>				
same	19	—	14	—	14	2	—	same
	23		15		23	3		
	17		18			2		
	7		14			3		
	30					4		
	16					2		

$\Sigma X$	116	112		47		37	16		10
$N$	5	6		3		2	6		1
$\bar{X}$	23.2	18.7		15.7		18.5	2.7		10
Range	10-38	7-30							—

			<u>Right testis</u>					
			<u>Jun</u>	<u>Jul</u>				
	13	—	14	—	8	3	—	
	18		16		16	3		
	19		17			4		
	9		8			3		
	28					4		
	16					4		

$\Sigma X$	112	103		47		24	21		8
$N$	5	6		3		2	6		1
$\bar{X}$	22.4	17.2		15.7		12	3.5		8
range	6-30								—





# *Urosaurus* *graciosa* Testis Volumes (45<sup>+</sup> mm S-V)

1960 Total

~~Left~~ Testes

(Total = Glamis in Feb., Mar., Jun., Aug., Sep., Oct)

FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
24	47	43	45	42	28	26	8	1
35	75	47	31	5	8	12	2	
10	34	36	41	45	6		3	
16	13	34	24	18	9		6	
14	39	45			6			
	47	30						
	29	35						
	39							
	43							
	30							
	10							

TOTAL VOL	99	406	270	141	110	57	38	19	1
MEAN	19.8	36.9	38.6	35.3	27.5	11.4	19.0	4.8	1
RANGE	10-35	10-75	30-47	24-45	5-45	6-28	12-26	2-8	—
NO. LIZARDS	5	11	7	4	4	5	2	4	1

Glamis

Same name	43	45	Name	8	Same name	same
	47	31		6		
				9		

$\Sigma x$	90	76	23
N	2	2	3
$\bar{x}$	45	38	7.7

range



# Urosaurus graciosa Testis Volumes (45+mm S-V)

1960 Total

Right Testis

(total = Glamis in Feb, Mar, Jun, Aug, Sep, Oct).

FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
23	44	46	34	40	10	25	6	1
24	57	57	42	4	7	8	2	
10	27	33	38	38	3		3	
13	14	29	20	20	8		4	
13	31	38			3			
	34	28						
	24	29						
	30							
	42							
	24							
	11							

TOTAL VOL	83	338	260	134	102	31	33	15	1
MEAN	16.6	30.7	37.1	33.5	25.5	6.2	16.5	3.8	1
RANGE	10-24	11-57	28-57	20-42	4-40	3-10	8-25	2-6	-
NO. LIZARDS	5	11	7	4	4	5	2	4	1

Glamis

46	34	7
57	42	3
		8





*Urosaurus* *graciosa* Testis Volumes (45<sup>+</sup>mm S-V)

1961 Total

Left Testis

MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
30	18	41	7	24	21	2	6
30		26	94	24	28	3	8
35		24	42	26	42	3	10
10		29	45	13	17	5	
45		30	47		18	4	
52		52	71			5	
		69	81			4	
		34	24			3	
		30	14			2	
		30	21				
		1					
		39					
		31					
		11					
		27					
		27					
		29					
		42					
		26					

TOTAL VOL	202	18	598	446	87	126	31	24
MEAN	33.7	18	31.5	44.6	21.8	25.2	3.4	8.0
RANGE	10-52	—	1-69	7-94	13-26	17-42	2-5	6-10
NO. LIZARDS	6	1	19	10	4	5	9	3

(total = Glamis in Mar)





# Urosaurus graciosa Testis Volumes (45+mm S-V)

1961  
Right Testis

MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
21	15	33	6	22	13	3	5
27		22	39	20	22	3	7
26		21	30	22	26	3	7
11		18	38	11	14	6	
46		25	37		19	3	
48		40	72			5	
		43	34			4	
		33	16			3	
		27	13			2	
		39	16				
		.5					
		30					
		30					
		12					
		26					
		24					
		29					
		33					
		24					

TOTAL VOL	179	15	688.5	301	75	94	32	19
MEAN	29.8	15	36.2	30.1	18.8	18.8	3.6	6.3
RANGE	11-48	—	.5-43	6-72	11-22	13-26	2-6	5-7
NO. LIZARDS	6	1	19	10	4	5	9	3

(total = Glamis in Mar)

1892  
 1893  
 1894

Year	1892	1893	1894	1895	1896	1897
Jan	10	15	20	25	30	35
Feb	12	18	22	28	32	38
Mar	14	20	24	30	34	40
Apr	16	22	26	32	36	42
May	18	24	28	34	38	44
Jun	20	26	30	36	40	46
Jul	22	28	32	38	42	48
Aug	24	30	34	40	44	50
Sep	26	32	36	42	46	52
Oct	28	34	38	44	48	54
Nov	30	36	40	46	50	56
Dec	32	38	42	48	52	58

The above table shows the number of days in each month for the years 1892 to 1897. The days are counted from the first day of the month to the last day of the month. The table is arranged in a grid with the months of the year as rows and the years as columns.

Urosaurus graciosus Testis Volumes (45+mm S-V)  
1961 - Glamis Only

		<u>Left</u>		<u>Testis</u>			
Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
same	3	41	94	24	21	2	same
	18	26	42	24	28	3	8
		24	45	26	17	3	10
		29	47		18	5	
		30	71			4	
		52	81			5	
		69				4	
		34					
		30					
		30					
		1					
		39					
		31					
		11					
		27					
		27					
		29					
		42					
		24					

$\Sigma x$	21	598	380	74	84	26
$\bar{x}$	10.5	31.5	63.3	24.7	21	3.7
N	2	19	6	3	4	7

range





# Urosaurus graciosus Testis Volumes (45<sup>+</sup> mm S-V)

1962 Total

## Left Testis

(total = Glamis in Apr, Aug, Sep)

APR	MAY	JUN	JUL	AUG	SEPT
52	24	17	27	2	3
61	21	5	20	11	2
48	14	15	16	18	3
11	30	13	25	16	.5
43	39	18	21	28	4
41	52		19	16	4
53	18		22		3
18			20		.5
65			23		3
55			16		2
10			.5		
52					
63					
14					
22					

TOTAL VOL	608	198	68	209.5	91	25
MEAN	40.5	28.3	13.6	19.0	15.2	2.5
RANGE	10-65	14-52	5-18	.5-27	2-28	.5-4
NO. LIZARDS	15	7	5	11	6	10

### Glamis

30	5	25
39	15	21
52	13	19
18	18	22
		20
		23
		16
		<del>0.5</del>

	<u>May</u>	<u>Jun</u>	<u>Jul</u>
$\Sigma x$	139	51	146
$N$	4	4	7
$\bar{x}$	34.8	12.8	20.8
range			



*Urosaurus* *graciosa* Testis Volumes (45+mm S-V)

1962 Total

Right Testis

(Total = Glamis in Apr, Aug, Sep)

APR	MAY	JUN	JUL	AUG	SEPT
40	21	13	18	2	5
51	18	8	18	13	2
49	17	10	13	17	2
13	32	13	21	13	.5
38	33	17	20	24	4
42	53		18	13	4
48	19		15		5
21			18		.5
51			22		3
47			18		3
15			.5		
55					
48					
13					
22					

TOTAL VOL	553	193	61	181.5	82	29
MEAN	36.9	27.6	12.2	16.5	13.7	2.9
RANGE	13-55	17-53	8-17	.5-22	2-24	.5-5
NO. LIZARDS	15	7	5	11	6	10

Glamis





# Urosaurus gracioso - Testis volumes (45<sup>+</sup>mm - SV)

1963

## Left Testis

(Total = Glamis in Apr, May, Jun)

Mar	Apr	May	Jun
<del>31</del>	42	25	18
<del>24</del>	8	16	13

21

42

42

61

35

36

35

26

$\Sigma X$

$N$

$\bar{X}$

Range

348	41	31
10	2	2
34.8	20.5	15.5

## Right Testis

<del>max</del>	Apr	May	Jun
<del>30</del>	27	20	16
<del>17</del>	6	13	15

21

31

30

53

30

34

20

24

$\Sigma X$

$N$

$\bar{X}$

Range

276	33	31
10	2	2
27.6	16.5	15.5





Xrosaurus graciosus - Testis Volumes (45+mm-S-V)

1964 Total = Glamis in all months

<u>Left Testis</u>			
Mar	Apr	Sep	Oct
31	38	5	1
24	47	2	3
	38	3	8
	57	8	
	57	3	
	38		
	57		
	35		
	27		
	45		
	10		
	63		

$\Sigma X$	55	512	21	12
$\bar{X}$	27.5	42.7	4.02	4
N	2	12	5	3

range

<u>Right Testis</u>			
Mar	Apr	Sep	Oct
30	33	4	1
<del>33</del>	35	1	5
	36	3	4
	32	5	
	55	3	
	36		
	45		
	55		
	27		
	42		
	5		
	60		

47	461	16	10
23.5	38.4	3.2	3.3
2	12	5	3



Urosaurus graciosus (45+ mm, S-V)

Left Testis volume - Summary - 1958-196<sup>4</sup><sub>3</sub>

Month	$\Sigma X$	$N$	$\bar{X}$
Feb	99	5	19.8
Mar	779	24	32.4
Apr	<del>1364</del> 1419	<del>40</del> 42	<del>34.1</del> 33.8
May	978	32	30.6
Jun	710	25	28.4
Jul	353	<del>20</del> 21	<del>16.8</del> 17.6
Aug	348	24	14.5
Sep	<del>97</del> 118	<del>32</del> 37	<del>3.0</del> 3.2
Oct.	<del>38</del> 50	<del>6</del> 10	<del>6.3</del> 5.0
Nov.	10	1	10
Dec.	11	1	11





Testis Volumes, *Urosaurus graciosa* Adults (45+ mm SVL)

Left testis larger

|||||

|||||

||

Right testis larger

|||||

Testes same size

|||



# Testis Volumes, *Urosaurus graciosa* Immature (< 45 mm SVL)

Left testis larger

||||

Right testis larger

||

Testes same size

||||



Urosaurus graciosa Adults (45+mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

|||||

|||

(17)

Testes even





Urosaurus graciosa Immature (< 45 mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

||||

(17)

Testes even



Urosaurus graciosa Adult ♂ (45+ mm S-U)

B	B1	B2	B3
Jan			
Feb			
Mar			
Apr			
May		-	
Jun	"	"	"
Jul			"
Aug			-
Sep	"		
Oct			
Nov			
Dec			





Urosaurus graciosa Immature ♂

	B	B1	B2	B3
Jan				
Feb				
Mar				
Apr "				
May				
Jun				
Jul				
Aug				
Sep				
Oct				
Nov				
Dec				



Urosaurus graciosa Adult ♀ (45+ mm. S-V)

(19)

(18)

(20)

LEFT OVARY ANTERIOR	RIGHT OVARY ANTERIOR	OVARIES EVEN
---------------------	----------------------	--------------




Urosaurus graciosus  
EGGS IN OVIDUCT

LEFT

RIGHT

[illegible]





Urosaurus graciosus

SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm

38 11.4 x 7.1  
103 11.7 x 7.8  
104 10.8 x 7.5; 12.0 x 7.2  
106 10.8 x 6.5; 11.0 x 7.2  
115 10.4 x 7.4  
121 11.1 x 7.7; 10.8 x 6.9  
198  
205 12.8 x 7.1  
208 12.8 x 7.1  
230 10.8 x 6.9; 10.8 x 7.2  
297 12.8 x 7.8  
300 12.2 x 7.8  
312 12.8 x 7.2  
315 12.0 x 7.4  
322 10.8 x 6.8  
407 12.8 x 6.5  
408 10.5 x 6.8; 11.1 x 7.5  
435 11.9 x 6.3

$$\Sigma X = 254.1 \times 158.0$$

$$N = 22$$

$$\bar{X} = 11.6 \times 7.2 \text{ mm}$$

Range =

SIZE IN mm

12.8 x 7.1  
11.4 x 7.4; 12.0 x 7.5  
12.0 x 7.5; 13.2 x 7.1  
12.3 x 7.2  
11.7 x 7.2; 11.3 x 7.4  
11.3 x 7.8; 11.3 x 6.6  
11.3 x 8.0; 11.7 x 8.0  
14.4 x 6.8  
13.2 x 6.9  
12.0 x 6.2  
13.1 x 8.0; 12.0 x 8.4  
13.5 x 7.2  
13.1 x 6.8  
12.2 x 7.7; 12.5 x 7.4  
9.9 x 6.8; 10.4 x 7.1  
14.1 x 6.3  
12.2 x 7.1  
11.0 x 6.6

$$\Sigma X = 316.2 \times 188.1$$

$$N = 26$$

$$\bar{X} = 12.2 \times 7.2 \text{ mm}$$

Range =

$$\Sigma X = 570.3 \times 346.1$$

$$N = 48$$

$$\bar{X} = 11.9 \times 7.2 \text{ mm}$$

Range = 9.9 x 6.2 mm to 14.4 x 8.4 mm.




Urosaurus graciosus  
OVA WITH YOLK

LEFT OVARY


RIGHT OVARY

NUMBER OF OVA

1 



2 



3 



4

5

6

7

8

9

10





Urosaurus graciosus

FAT BODIES

(7)

ADULT  
(45+ mm.)

IMMATURE

MONTH

♂

♀

♂

♀

JAN

FEB

MAR

APR

MAY

JUN

JUL

AUG

SEPT

OCT

NOV

DEC

5

23

45

35

26

21

25

33

6

1

1

2

12

31

33

22

28

19

25

8

2

1

1

1

1

1

1



Urosaurus graciosus Adult (45+ mm S-V)

No.	Left ovary	Right ovary
1		
2		
3		
4		
5		
5-		
6		
6		
7		
7		
8		
8		
9		
9		
10		
10		
11		
11		
12		
12		
13		
14		
15-		



Urosaurus graciosus Immature

No.	Left ovary	Right ovary
-----	------------	-------------

1	I	
2		
3	II	
4	I	II
5	III	III
6	III	I
7		I
8		I
9		
10		
11		
12		
13		
14		
15		





Urosaurus graciosa Adult ♀ (45+ mm S-V)

B

B1

B2

B3

Jan

Feb

Mar

Apr ~~||||~~||||

May ~~||~~

Jun ~~||||~~

Jul ~~||||~~

Aug ~~||||~~

Sep ~~||||~~

Oct

Nov

Dec

|

||||

||

|

|



Urosaurus graciosa Immature ♀

B

B1

B2

B3

Jan

Feb

Mar

Apr 1

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec





UTA STANSBURIANA

ITA STANSBURIANA



I.R. - 13

8 1/2 x 11

# UTA STANSBURYANA

## TOTAL COLLECTED

MONTH	1971			1972			
	♂	♀	TOTAL	♂	♀	TOTAL	
JAN	3	2	5	14	4	20	
FEB	-	-	-	9	7	16	
MAR	1	2	3	43	22	65	
APR	2	1	3	40	27	67	
MAY	2	1	3	51	48	99	
JUN	-	-	-	29	13	42	
JUL	-	-	-	5	4	9	
AUG	6	-	6	14	10	24	
SEP	10	6	16	17	8	25	
OCT	5	4	9	4	1	5	
NOV	-	-	-	-	-	-	
DEC	-	-	-	1	-	1	
	29	16	45	227	146	373	TOTALS



UTA STANSBURIANA REPRODUCTION CHART

454

MALE

ENLARGED TESTIS ( $> 30 \text{ mm}^3$ )

1959 1/29 - 6/24  
1960 1/21 - 5/21, 12/14  
1961 1/5 - 6/12  
1962 4/14 - 6/21  
1/5 - 4/21, 6/14

CONVOLUTED EPIDIDYMUS

1959 1/21 - 7/14  
1960 1/21 - 5/21, 12/14  
1961 1/5 - 6/25  
1962 4/14 - 6/21  
1/5 - 7/16, 12/14

MOTILE SPERM

1959 1/29 - 7/16  
1960 1/21 - 6/11  
1961 1/5 - 6/23  
1962 4/22 - 6/11 (E + 4/14)  
1/5 - ~~4/21 (E)~~ 7/16 CH

FEMALE

OVA ACCUMULATED YOLK

1959 1/29 - 5/29  
1960 3/14 - 5/20  
1961 1/17 - 5/21  
1962 4/14 - 6/21  
1/17 - 6/21





U.S. (CONT.)

ENLARGED EGGS (> 3 mm.)

1959 1/29 - 1/16

1960 3/11 - 5/20

1961 2/1 - 5/21

1962 4/20 - 6/29

1/29 - 7/14

CONVOLUTED OVIDUCTS

1959 1/29 - 10/11

1960 1/29 - 1/25

1961 2/12 - 3/26

1962 7/14 - 8/18

1/29 - 10/11

EGGS IN OVIDUCTS

1959 5/16 - 7/16

1960 3/17 - 5/20

1961 3/15 - 6/13

1962 4/14 - 4/17

3/13 - 7/18 (63)

CORPORA LUTEA

1959 7/16

1960 3/25 - 7/16

1961 3/13 - 6/13

1962 4/14 - 4/14

3/13 - 7/18 (63)



# Potential Breeders, Uta stansburiana ♂♂ (45+mm, S-V)

①

(smallest ♂ = 43 mm)  
(largest ♂ = 60 " )

## Totals, 1958-1961

Date	# ♂	No ♂	Total	% ♂
Aug. '58	1	3	4	25
Sept.	0	3	3	0
Oct.	0	2	2	0
Jan. '59	3	0	3	100
Feb.			0	
Mar.	1	0	1	100
Apr.	3	0	3	100
May	3	7	10	30
June	3	0	3	100
July	4	0	4	100
Aug.	1	3	4	25
Sept.	0	6	6	0
Oct.	0	1	1	0
Jan. '60	1	0	1	100
Feb.			0	
Mar.	17	0	17	100
Apr.	16	0	16	100
May	2	0	2	100
June	1	0	1	100
July			0	
Aug.	0	1	1	0
Sept.	0	2	2	0
Oct.	0	1	1	0
Nov.			0	
Dec.	0	1	1	0
Jan. '61	5	1	6	83
Feb.	7	2	9	78
Mar.	25	0	25	100
Apr.	15	0	15	100
May	19	0	19	100

(con't.)

Month	# ♂	No ♂	Total	% ♂
Jan.	9	1	10	90
Feb.	7	2	9	78
Mar.	43	0	43	100
Apr.	34	0	34	100
May	24	7	31	77
June	8	0	8	100
July	4	0	4	100
Aug.	2	7	9	22
Sept.	0	16	16	0
Oct.	0	4	4	0
Nov.			0	
Dec.	0	1	1	0
Total			169	





Potential Breeders, Uta stansburiana ♂♂ (con't.)

(2)

Totals, 1958-1963

<u>Date</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
June '61	4	0	4	100
July			0	
Aug.			0	
Sept.	0	5	5	0
Apr. '62	4	0	4	100%
May '62	8	1	9	89
Jun. '62	21	0	21	100%
Aug.			0	
Jan. '63	1	0	1	100
Apr.	3	0	3	100
May.	7	0	7	100
Jul.	1	0	1	100
Jan. '64	3	0	3	100
May	3	0	3	100

<u>Month</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
Jan	10	1	11	91
Feb	7	2	9	78
Mar	43	0	43	100
Apr.	41	0	41	100
May	39	8	47	83
Jun	29	0	29	100
Jul	5	0	5	100
Aug	2	7	9	22
Sep	0	16	16	0
Oct.	0	4	4	0
Nov			0	0
Dec	0	1	1	0
Total			215	



# Potential Breeders, Uta stansburiana 07-17, By Elevation

(Total 152)

Elevation (ft.)

Date	<u>0 - 1999</u>		<u>2000 - 3777</u>		<u>4440 - 5777</u>		<u>6000 - 7777</u>	
	♂/T	♀/8	♂/T	♀/8	♂/T	♀/8	♂/T	♀/8
Aug. '58	0/2	0	1/2	50				
Sept.			0/3	0				
Oct.	0/2	0						
Jan. '59			3/3	100				
Mar.	2/2	100						
Apr.	1/1	100	2/2	100				
May			9/9	100	1/1	100		
June	3/3	100						
July	2/2	100	2/2	100				
Aug.			0/1	0	1/3	33		
Sept.	0/2	0	0/2	0	0/2	0		
Oct.					0/1	0		
Jan. '60	1/1	100						
Mar	1/1	100	7/7	100	9/9	100		
Apr	5/5	100	11/11	100				
May			2/2	100				
June			1/1	100				
Aug.	0/1	0						
Sept.	0/2	0						
Oct.	0/1	0						
Dec.	0/1	0						
Jan. '61	5/6	83						
Feb.	3/3	100	4/6	67				
Mar.	19/19	100	3/3	100	2/2	100	1/1	100
Apr.	13/13	100			2/2	100		
May			3/3	100	16/16	100		
June	3/3	100			1/1	100		
Sept.	0/5	0						





# Potential Breeders, Uta stansburiana ~~sp.~~, By Elevation

(Totals)

Elevation (ft.)

Month	<u>0-1199</u>		<u>2000-5999</u>		<u>6000-5999</u>		<u>6000-1999</u>	
	<u>B/T</u>	<u>%</u>	<u>B/T</u>	<u>%</u>	<u>B/T</u>	<u>%</u>	<u>B/T</u>	<u>%</u>
Jan.	6/7	86	3/3	100				
Feb.	3/3	100	4/6	67				
Mar.	22/22	100	10/10	100	11/11	100	1/1	100
Apr.	19/19	100	13/13	100	2/2	100		
May			14/14	100	17/17	100		
June	6/6	100	1/1	100	1/1	100		
July	2/2	100	2/2	100				
Aug.	0/3	0	1/3	33	1/3	33		
Sept.	0/9	0	0/5	0	0/2	0		
Oct.	0/3	0			0/1	0		
Nov.								
Dec.	0/1	0						





Uta stansburiana (45<sup>+</sup>mm, S-V)

Left Testis Volume - Summary - 1958-1963.

Month	$\Sigma X$	$N$	$\bar{X}$
Jan	625	10	62.5
Feb	602	9	66.9
Mar	2795	43	65.0
Apr	1813	40	45.3
May	1555	46	33.8
Jun	<del>1044</del> 1044	<del>30</del> 29	<del>35.2</del> 36.0
Jul	54	5	10.8
Aug	20	9	2.2
Sep	93	17	5.5
Oct	19	4	4.8
Nov.			
Dec.	35	1	35

	<u>1967</u>		
Nov.	206	9	23
Dec.	210	5	42



Uta stansburiana Testis Volumes (45<sup>+</sup>mm S-V)

1958  
~~Left~~ Testis

AUG SEPT OCT

2 5 5

4 5 6

1 2

2

TOTAL VOL 9 12 11

MEAN 2.3 4.0 5.5

RANGE 1-4 2-5 5-6

NO. LIZARDS 4 3 2

Right Testis

AUG SEPT OCT

3 4 6

2 5 5

2 1

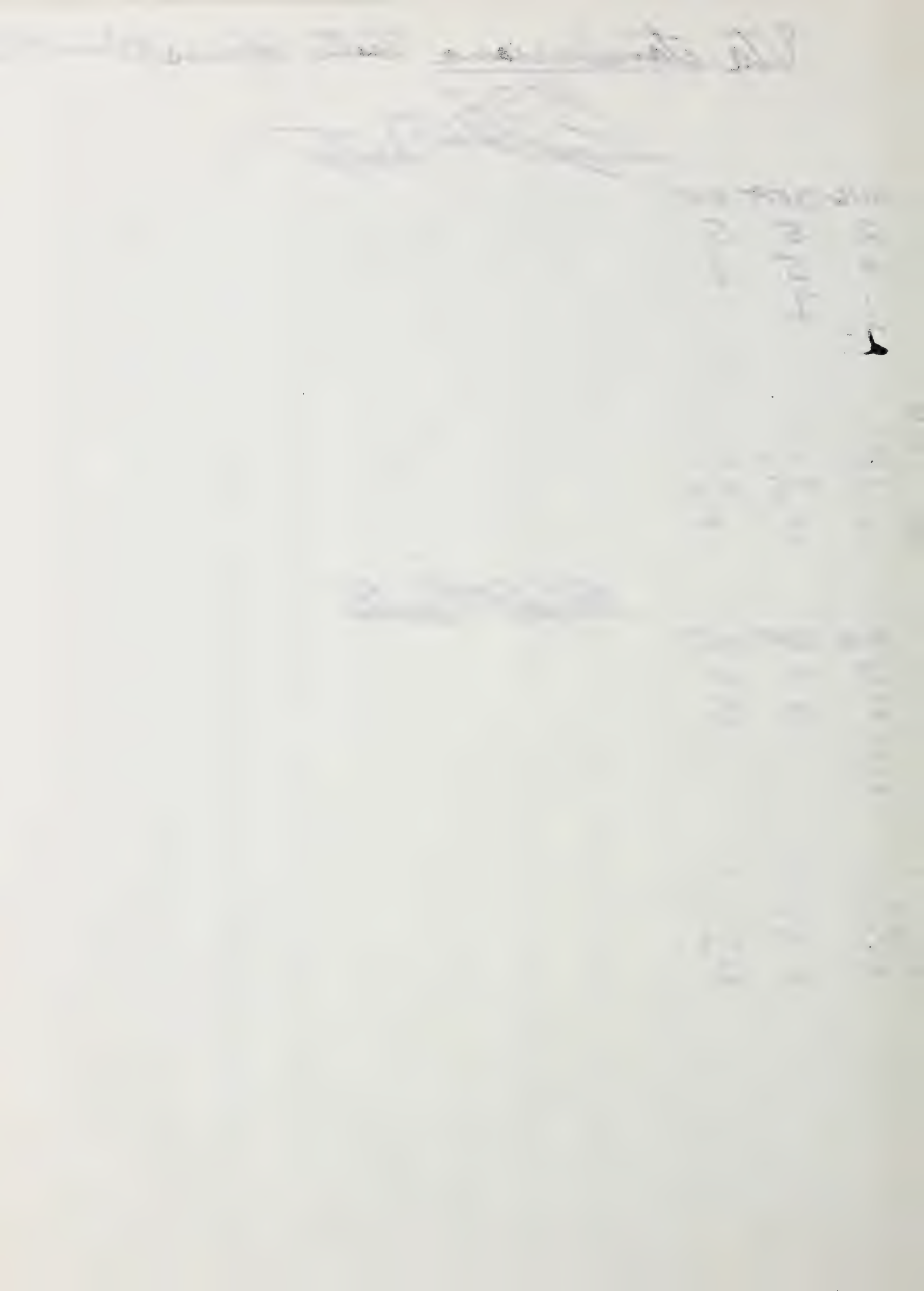
2

TOTAL VOL 9 10 11

MEAN 2.3 3.3 5.5

RANGE 2-3 1-5 5-6

NO. LIZARDS 4 3 2





# Uta stansburiana Testis Volumes (45<sup>mm</sup> S-V)

1959  
Left Testis

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
65	—	51	49	21	26	19	5	1	7
27		65	37	30	33	8	1	3	
				18	51	4	1	5	
				24		12	2	2	
				6				3	
				19				2	
				7				13	
				2					
				8					
				33					

TOTAL VOL	92	0	116	86	168	80	43	9	29	7
MEAN	46.0	0	58.0	43.0	16.8	26.7	10.8	2.3	4.1	7
RANGE	27-65	0	51-65	<sup>37</sup> <del>49</del>	2-33	26-51	4-19	1-5	1-13	—
NO. LIZARDS	2	0	2	2	10	3	4	4	7	1

Right Testis

<del>65</del>	—	59	45	21	33	18	4	2	7
29		40	38	22	41	6	2	4	
				17	36	3	1	5	
				17		11	2	2	
				5				4	
				19				2	
				8				21	
				3					
				9					
				30					

TOTAL VOL	94	0	99	83	151	110	38	9	40	7
MEAN	47.0	0	49.5	41.5	15.1	36.7	9.5	2.3	5.7	7
RANGE	29-65	0	40-59	38-45	5-30	33-41	3-18	1-4	2-21	—
NO. LIZARDS	2	0	2	2	10	3	4	4	7	1

*Continued from page 253*

Age	Sex	Weight	Height	Temp.	Pulse	Respiration	BP.	Remarks
12	M	115	52	98.6	100	20	110/70	Normal
13	F	105	50	98.4	96	18	100/60	Normal
14	M	120	54	98.6	102	22	115/75	Normal
15	F	110	52	98.4	98	20	105/65	Normal
16	M	130	56	98.6	104	24	120/80	Normal
17	F	120	54	98.4	100	22	110/70	Normal
18	M	140	58	98.6	106	26	125/85	Normal
19	F	130	56	98.4	102	24	115/75	Normal
20	M	150	60	98.6	108	28	130/90	Normal
21	F	140	58	98.4	104	26	120/80	Normal
22	M	160	62	98.6	110	30	135/95	Normal
23	F	150	60	98.4	106	28	125/85	Normal
24	M	170	64	98.6	112	32	140/100	Normal
25	F	160	62	98.4	108	30	130/90	Normal

The following table shows the results of the physical examination of the patients, and the results of the laboratory tests, including the blood count, the sedimentation rate, and the results of the X-ray examination of the chest and the spine.

Patient	Age	Sex	Weight	Height	Temp.	Pulse	Respiration	BP.	Hb.	WBC	ESR	Chest X-ray	Spine X-ray
1	12	M	115	52	98.6	100	20	110/70	12	10,000	10 mm/hr	Normal	Normal
2	13	F	105	50	98.4	96	18	100/60	11	9,000	8 mm/hr	Normal	Normal
3	14	M	120	54	98.6	102	22	115/75	13	11,000	12 mm/hr	Normal	Normal
4	15	F	110	52	98.4	98	20	105/65	12	10,000	10 mm/hr	Normal	Normal
5	16	M	130	56	98.6	104	24	120/80	14	12,000	14 mm/hr	Normal	Normal
6	17	F	120	54	98.4	100	22	110/70	13	11,000	13 mm/hr	Normal	Normal
7	18	M	140	58	98.6	106	26	125/85	15	13,000	15 mm/hr	Normal	Normal
8	19	F	130	56	98.4	102	24	115/75	14	12,000	14 mm/hr	Normal	Normal
9	20	M	150	60	98.6	108	28	130/90	16	14,000	16 mm/hr	Normal	Normal
10	21	F	140	58	98.4	104	26	120/80	15	13,000	15 mm/hr	Normal	Normal
11	22	M	160	62	98.6	110	30	135/95	17	15,000	17 mm/hr	Normal	Normal
12	23	F	150	60	98.4	106	28	125/85	16	14,000	16 mm/hr	Normal	Normal
13	24	M	170	64	98.6	112	32	140/100	18	16,000	18 mm/hr	Normal	Normal
14	25	F	160	62	98.4	108	30	130/90	17	15,000	17 mm/hr	Normal	Normal

The results of the physical examination and the laboratory tests are consistent with the diagnosis of a mild, chronic, non-specific inflammation of the connective tissue, and the results of the X-ray examination of the chest and the spine are normal.

Vta stansburiana Testis Volumes (45<sup>+</sup>mm S-V)

1960  
Left Testis

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
49	—	60	26	39	4	—	2	6	1	—	35
		65	63	28				3			
		45	39								
		51	49								
		88	49								
		68	36								
		42	37								
		60	85								
		55	51								
		65	81								
		79	47								
		55	41								
		60	23								
		71	51								
		73	68								
		53	53								

TOTAL VOL	49	0	990	799	67	4	0	2	9	1	0	35
MEAN	49	0	61.9	49.9	33.5	4	0	2	4.5	1	0	35
RANGE	—	0	42-88	23-85	28-39	—	0	—	3-6	—	0	—
NO. LIZARDS	1	0	16	16	2	1	0	1	2	1	0	1





Uta stansburiana Testis Volumes (45mm S-V)

1960  
Right Testis

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
51	-	57	82	38	3	-	3	8	2	-	53
		44	57	22				3			
		51	67								
		36	57								
		85	40								
		73	48								
		55	31								
		45	69								
		64	51								
		47	90								
		63	55								
		76	39								
		82	36								
		57	65								
		61	55								
		51	73								

TOTAL VOL	51	0	947	915	60	3	0	3	11	2	0	53
MEAN	5	0	59.2	57.2	30.0	3	0	3	5.5	2	0	53
RANGE	-	0	36-85	31-82	22-38	-	0	-	3-8	-	0	-
NR LIZARDS	1	0	16	16	2	1	0	1	2	1	0	1





# *Vta stansburiana* Testis Volumes (45+mm S-V)

1961  
~~Left~~ Testis

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT
60	20	58	5	24	8	-	-	2
68	92	67	45	37	38			10
42	65	79	55	23	10			20
128	94	82	51	19	24			1
65	85	102	41	49				10
71	4	78	41	42				
	48	53	37	55				
	92	46	42	35				
	102	42	30	68				
		78	60	73				
		63	48	30				
		55	33	49				
		71	60	53				
		76	41	55				
		63	46	63				
		73		51				
		68		53				
		73		23				
		68		41				
		71		30				
		55						
		85						
		35						
		53						
		95						

TOTAL VOL	434	602	1689	635	873	80	0	0	43
MEAN	72.3	66.9	67.6	42.3	43.7	20.0	0	0	8.6
RANGE	42-128	4-102	35-102	5-60	19-73	8-38	0	0	1-20
NO. LIZARDS	6	9	25	15	20	4	0	0	5



# Uta stansburiana Testis Volumes (45 mm S-V)

1961  
Right Testis

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT
42	22	60	5	20	10	—	—	2
52	81	81	53	35	45			11
<del>52</del>	73	79	65	21	7			19
<del>57</del>	78	68	39	20	24			1
46	95	79	44	51				10
52	4	79	38	51				
	48	49	41	63				
	85	53	46	33				
	79	53	18	85				
		76	55	58				
		50	49	20				
		66	46	35				
		67	53	53				
		65	28	47				
		53	45	65				
		81		51				
		53		53				
		65		20				
		68		49				
		65		26				
		53						
		68						
		40						
		48						
		82						

14	TOTAL VOL	301	565	1601	625	856	86	0	0	43
	MEAN	50.2	62.8	64.0	41.7	42.8	<del>45</del>	0	0	8.6
	RANGE	42-57	4-95	40-82	5-65	20-85	7-45	0	0	1-19
	NO. LIZARDS	6	9	25	15	20	4	0	0	5







# Uta stansburiana Testis Volumes (45 mm SVL)

1962  
Left Testis

APR	MAY	JUN	<del>JUL</del>
33	33	53	-
46	53	45	
51	9	60	
28	55	49	
	36	45	
	42	60	
	42	28	
	30	37	
	47	49	
		47	
		47	
		51	
		23	
		38	
		33	
		15	
		51	
		32	
		47	
		39	
		33	

TOTAL VOL 158 347 882  
 MEAN 39.5 38.6 42.0  
 RANGE 28-51 9-55 15-60  
 NO. LIZARDS 4 9 21

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Handwritten text, possibly a date or a short phrase.

Handwritten text on the right side of the page, possibly a list or a set of notes.

9th stansburiana Testis Volumes (45 Tarran S-V)

1962  
Right Testis

APR	MAY	JUN
47	84	51
53	60	47
65	5	60
36	66	51
	51	46
	47	53
	38	45
	27	44
	34	42
		53
		43
		53
		32
		48
		33
		15
		53
		33
		53
		30
		33

TOTAL VOL 201 412 918  
 MEAN 50.3 45.8 43.7  
 RANGE 36-65 5-84 15-60  
 NO. LIZARDS 4 9 21



Uta stansburiana - Testis volumes - (45<sup>+</sup>mm - S-V)

1963

Left Testis

Jan	Apr	May	Jul.
50	35	15	11
	18	15	
	82	20	
		18	
		32	

$\Sigma X$

$N$

$\bar{X}$

range

Right Testis

Jan	Apr	May	Jul.
51	42	13	13
	20	23	
	63	20	
		20	
		32	

$\Sigma X$

$N$

$\bar{X}$

range-





# Testis Volumes, *Uta stansburiana* Adults (45+mm S-U)

Left testis larger

|||||  
|||||

Right testis larger

|||||  
|||||

Testes same size

|||||



# Testis Volumes, *Uta stansburiana* Immature (< 45 mm SVL)

Left testis larger

||||

Right testis larger

||||

Testes same size

|||





Uta stansburiana Adults (45+ mm S-V)

⑮

Left testis anterior

⑯

Right testis anterior

|||||

⑰

Testes even



Uta stansburiana Immature (< 45 mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

||||

(17)

Testes even



Uta stansburiana Adult ♂ (45+ mm S-V)

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

|||

||||

|||

|||

||||

|||

|||

||||

|





Uta stansburiana Immature ♂

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

I

II



Uta stansburiana Adult ♀ (43+mm, S-V)

(19)

(18)

(20)

LEFT OVARY ANTERIOR

RIGHT OVARY ANTERIOR

OVARIES EVEN

|||||

|||||





Uta stansburiana

EGGS IN OVIDUCT

LEFT

RIGHT

NO. of EGGS	0	1	2	3	4	5	6	7	8	9	10		0	1	2	3	4	5	6	7	8	9	10	
NO. of TAG																								
77	✓															✓								
110			✓													✓								
134			✓														✓							
157		✓														✓								
201				✓													✓							
212			✓													✓								
214			✓													✓								
251		✓															✓							
254		✓														✓								
266		✓														✓								
267			✓													✓								
268	✓																✓							
275			✓													✓								
276			✓														✓							
280			✓													✓								
281			✓											✓		✓								
282			✓											✓		✓								
283			✓											✓		✓								
285			✓											✓		✓								
293		✓												✓		✓								
295			✓											✓		✓								
305			✓											✓		✓								
306			✓											✓		✓								
310				✓												✓								
322			✓													✓								
323			✓													✓								
331			✓														✓							
334					✓											✓								
335			✓													✓								



Uta stansburiana

EGGS IN OVIDUCT

LEFT

RIGHT

NO. of EGGS	0	1	2	3	4	5	6	7	8	9	10		0	1	2	3	4	5	6	7	8	9	10
-------------	---	---	---	---	---	---	---	---	---	---	----	--	---	---	---	---	---	---	---	---	---	---	----

NO. of TAG

336

✓

✓

337

✓

✓

344

✓

✓

347

✓

✓

355

✓

✓

356

✓

✓

362

✓

✓

363

✓

✓

388

✓

✓

392

✓

✓





Uta stansburiana

## SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm.

77

110 10.2 x 7.4 11.0 x 7.2

134 10.5 x 6.2 10.2 x 7.4

157 11.0 x 6.3

201 8.9 x 6.0 10.8 x 6.3 9.0 x 6.0

212 12.2 x 7.1 12.9 x 6.9

214 11.0 x 7.4 11.1 x 7.8

251 9.0 x 5.7

254 12.5 x 7.5

266 12.5 x 7.2

267 11.1 x 6.6 10.7 x 7.1

268

275 10.5 x 7.7 11.1 x 8.7

276 10.8 x 6.3 10.5 x 6.8

280 12.0 x 7.5 11.6 x 7.7

281 12.5 x 7.5 12.9 x 7.5

282 11.1 x 7.1 11.0 x 7.2

283 11.3 x 7.4 12.3 x 6.8

285 12.8 x 7.2 12.8 x 7.8

293 11.7 x 6.8

295 11.3 x 7.1 11.6 x 6.8

305 10.8 x 6.8 10.7 x 6.8

306 10.7 x 6.3 11.4 x 6.5

310 no measurements

322 9.0 x 6.2 6.8 x 5.3

323 11.0 x 6.2 12.0 x 6.0

331 10.4 x 7.1 10.1 x 7.2

334 9.8 x 7.2 9.8 x 7.2 9.8 x 7.1 9.0 x 7.4

335 11.4 x 7.1 12.0 x 6.9

336 12.0 x 6.9

SIZE IN mm.

12.6 x 8.1 11.0 x 7.7

14.0 x 7.5 11.3 x 6.8

10.7 x 6.8 9.6 x 6.9 7.5 x 6.3

11.3 x 6.8 10.4 x 6.6

11.3 x 6.0 10.1 x 6.8 9.8 x 6.5

12.9 x 7.1 12.3 x 7.2

11.0 x 7.8 10.7 x 7.4

8.6 x 6.0 7.5 x 7.5 9.0 x 6.5

10.1 x 7.5 10.5 x 7.5

11.4 x 7.5 12.2 x 7.8

12.0 x 7.2 10.7 x 6.9

10.5 x 7.2 10.5 x 7.4 11.3 x 7.5 9.9 x 7.5

11.7 x 7.2 12.0 x 7.2

10.5 x 7.1 10.4 x 6.9 10.8 x 6.6

12.2 x 7.1 12.0 x 7.4

14.0 x 6.8

10.7 x 7.2 11.0 x 7.1

11.9 x 6.8 11.6 x 7.1

12.0 x 8.0 12.5 x 8.0

9.5 x 7.1 11.4 x 7.1

11.3 x 6.2 11.3 x 6.5

11.4 x 6.8 11.1 x 6.2

11.7 x 7.1 11.6 x 6.8

no measurements

9.9 x 6.8 8.3 x 6.3 7.8 x 6.5

9.0 x 5.3 10.5 x 6.0 11.7 x 6.0

10.4 x 7.4 9.9 x 7.2 10.2 x 6.8 10.4 x 7.2

11.0 x 7.2 12.2 x 7.2

11.3 x 7.2 11.0 x 6.9

11.4 x 7.1 11.7 x 7.1





Uta stansburiana

## SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm

337 10.8 x 7.4 11.3 x 6.6

344 10.1 x 6.6 11.4 x 6.3

347 10.8 x 7.2 11.7 x 7.8

355 12.5 x 7.7 11.4 x 7.5

356 11.9 x 7.7 10.8 x 7.4 11.1 x 6.8

362 10.8 x 7.1 10.7 x 6.8

363 11.4 x 7.5 12.2 x 8.0

388 11.1 x 6.8 10.5 x 6.9

392 10.5 x 7.2 9.8 x 7.2

 $N = 19$  $\bar{X} = 11.1 \times 7.2 \text{ mm}$ ~~Range =~~ $\Sigma X = 210.8 \times 136.5$ 

SIZE IN mm

12.0 x 7.2 11.4 x 7.7

10.7 x 7.4 10.8 x 7.5

11.7 x 7.5 11.3 x 7.8

12.9 x 6.9

11.7 x 6.6

11.3 x 7.2 10.7 x 6.9

11.0 x 7.2 11.9 x 7.2

10.4 x 7.5 11.3 x 6.8 11.3 x 7.4

11.4 x 6.3 11.1 x 6.8

 $N = 17$  $\bar{X} = 11.3 \times 7.2 \text{ mm}$ ~~Range =~~ $N = 36$  $\Sigma X = 192.9 \times 121.9$  $\bar{X} = 11.2 \times 7.2 \text{ mm}$ 

Range = 9.8 x 6.3 mm to 12.9 x 8.0 mm

 $\Sigma X = 403.7 \times 258.4$



Uta stansburiana

OVA WITH YOLK

LEFT OVARY

RIGHT OVARY

NUMBER OF OVA

1 ~~||||~~|||

~~||||~~

2 ~~||||~~~~||||~~~~||||~~|||

~~||||~~~~||||~~~~||||~~~~||||~~||

3 ~~||||~~|||

~~||||~~~~||||~~

4

||

5

6

7

8

9

10 |

|





Uta stansburiana  
FAT BODIES

MONTH	ADULT		IMMATURE	
	♂ (45+mm.)	♀ (43+mm.)	♂	♀
JAN. <del>14</del> 14		2		
FEB. 7		2		
MAR. 1 44		<del>    </del> 21		/
APR. 11 42		<del>    </del> 23	/	
MAY <del>11</del> 50		31		
JUN. <del>11</del> 21		13		
JUL. 1 5		4		
AUG. <del>11</del> 15		6		
SEPT. <del>11</del> 27		13		//
OCT. 1 7		3		/
NOV.				
DEC. 1				



Uta stansburiana Adult (43+ mm S-V)

No.	Left ovary	Right ovary
1	—	—
2	—	—
3	—	—
4	—	—
5		
6		
7		
8		
9		
10		
11		
12	—	—
13	—	—
14	—	—
15	—	—



Uta stansburiana Immature

No.	Left ovary	Right ovary
1		
2		
3		
4		
5	II	
6	III	IIII
7	III	II
8		III
9		I
10		
11		I
12		
13		
14		I
15		





Uta stansburiana Adult ♀ (43+ mm S-V)

B	B1	B2	B3
Jan			
Feb			
Mar			
Apr 1	III	III	
May 11	III	III	
Jun	I	III	I
Jul 1		I	
Aug 11			
Sep			
Oct			
Nov			
Dec			



Uta stansburiana Immature ♀

B

B1

B2

B3

Jan  
Feb  
Mar  
Apr  
May  
Jun  
Jul  
Aug  
Sep  
Oct  
Nov  
Dec





Codes, etc.

Codes, etc.

# Reproductive Data to be Tabulated and Summarized -

①

♂♂

1. No. ♂ autopsied each month - ad & imm.
2. No. molting - ad & imm.
3. Time of molt
4. No. ♂ with right testis anterior
5. " " " left " " " }
6. " " " testes even
7. No. with right testis larger
8. " " " left " " " }
9. " " " testes same volume
10. No. ♂ with no post-anal scales
11. Time when vas deferens & epididymis highly convoluted
12. " of enlarged testes ( $> \text{mm}^3$ )
13. Breeding color (B, 1, 2, 3) - ad & imm
14. Testis volume vs. S-V length of small adults compared to large adults at beginning & middle of breeding season
15. Rainfall vs. testes volumes & potential breeders (plotted)
16. S-V length of largest & smallest ♂♂ dissected

~~[adults 80+mm S-V (Uma)]~~





Reproductive Data to be Tabulated and Summarized

♀♀

1. Breeding colors (B, 1, 2, 3) - ad. & imm.
2. No. eggs / ♀ laid
3. Size of laid eggs (~~oviducal~~)
4. No. ova in left ovary accumulating yolk
5. No. " " right " "
6. White spots in ova
7. No. ♀ accumulating yolk in eggs
8. Adult ♀ molting } Time of molt & No. of animals
9. Imm. ♀ " }
10. Oviducal egg size - each oviduct
11. No. eggs in each oviduct
12. No. eggs in each ovary - adult
13. No. corpora lutea in each ovary vs. eggs in oviducts
14. No. eggs in each ovary - immature
15. Time of: yolk accumulation, enlarged eggs in ovary, eggs in oviduct, corpora lutea in ovaries
16. Size of smallest ♀ with enlarged ovarian eggs
17. " " " " " convoluted oviducts
18. " " " " " eggs accumulating yolk
19. No. times corpora lutea present but no oviducal eggs
20. " " no. " " > no. oviducal eggs
21. No. with enlarged post-anal scales
22. No. & time fat bodies present
23. No. ♀ with left ovary anterior
24. " " " right " "
25. " " " ovaries even
26. No. & % of ♀♀ with eggs in oviducts each year
27. No. ♀ autopsied each month - ad. & imm.
28. No. enlarged eggs in each ovary

adults  
70+mm  
5-6





ff (cont.)

②

29. No. times left ovary and/or oviduct contained most eggs
30. " " right " " " " " " " "
31. " " no. even
32.  $\bar{x}$  diam. of largest eggs in ovary each month for each year + combined
33.  $\bar{x}$  " " " " " oviduct " " " " " " " "
34. Plot rainfall (winter) vs. # ♀ with oviducal eggs + enlarged eggs.
35. S-U length of largest + smallest ff dissected



## Testes Biology (From Sex & Internal Secretions) (C.R. Moore)

Testicular activity has been described in several species of reptiles by such investigators as:

Dalcq, A. 1920. Le cycle saisonnier du testicule de l'ovet.  
C.R. Soc. Biol., 83: 820

Reiss, P. 1923a. Sur les caractères sexuels secondaires chez le lézard mâle. Compte Rend. Soc. Biol., 88: 445

——— 1923b. Le cycle testiculaire du lézard. C.R. Soc. Biol. 88: 447.

Franckenberger, Z. 1922. Zur frage der funktionellen Bedeutung der Hodenzwischenzellen. Anat. Anz., 55: 545.

Courrier, R. <sup>1929.</sup> Les modifications saisonnières de l'appareil uro-génital chez Uromastix acanthinurus (Bell). Arch. d'Anat. Mic., 25: 388

Blount, R.F. 1929. Seasonal cycles of the interstitial cells in the testis of the horned toad (Phrynosoma solare); seasonal variation in the number and morphology of the interstitial cells and the volume of the interstitial tissue. Jour. Morph. & Physiol., 48: 317

(Testes of minimum size during hibernation, slowly increased in size after hibernation, & in May a sudden increase in size to a maximum at the mating period of June & July; from July to November there was a gradual reduction in size. The average maximal volume of testis was 7X the average minimal volume. Shedding of spermatozoa led to a collapse of the tubules & great testicular reduction.)

Herlant, M. 1933. Recherches histologiques et experimentales sur les variations cycliques du testicule et des caractères sexuels secondaires chez les reptiles. Arch. de Biol., 44: 347



(Worked on Lacerta muralis + Anguis fragilis in Mediterranean area. Spermatozoa shed in May, followed immediately by a renewal of the spermatogenic cycle. Spermatogonial activity occurs in May-June + produces the spermatocyte as the characteristic cell of August. Maturation divisions are prominent in February-March + spermatozoa occur in April.)

Regamey, J. 1935. Les caractères sexuels du lézard (Lacerta agilis L.). Rev. suisse de Zool., 42:87

Matthey, R. 1929. Caractères sexuels secondaires du lézard male. Bull. Soc. vend. Sc. nat., 57:71

Takewaki, K., + S. Fukuda. 1935. Effects of gonadectomy and testicular transplantation on the kidney and epididymis of a lizard, Takydromus tachydromoides. Jour. Fac. Sc. Tokyo Imper. Univ., 4: 63

(transplants)



Minimum S-V Lengths Considered as Adult (mm)

<u>Species</u>	<u>♂</u>	<u>♀</u>
Callisaurus	70	65
P. m'calli	63	63
P. platyrhinos	65	65
Coleonyx	55	55
Dipsosaurus	115	110
Uma	80	70
S. graciosus	55	50
S. magister	85	75
S. occidentalis	65	60
Urosaurus grac.	45	45
Uta stans.	45	43
Sauromalus	170	120
Cnemid. tigris	80	70
Crotaph. wislizeni	90	90
(S. orcutti	90	85 )



# Adult S-V length (mm)

		$\bar{x}$	range	n
Callisaurus draconoides	♂	81.7	<del>55-102</del> 55-102	107
	♀	72.1	55-82	75
Cnemidophorus tigris	♂	94.2	80-116	117
	♀	88.7	70-110	55
Coleonyx variegatus	♂	67.4	55-81	195
	♀	70.0	55-84	161
Crotaphytus wislizeni	♂	<del>104.8</del> 105.2	90-116	<del>20</del> 29
	♀	113.6	90-138	53
Dipsosaurus dorsalis	♂	126.7	115-145	377
	♀	119.7	110-139	201
Phrynosoma mitchilli	♂	73.0	63-83	31
	♀	74.9	63-87	110
Phrynosoma platyrhinos	♂	79.8	63-96	62
	♀	83.0	63-97	19
Saurodactylus obesus	♂	191.6	170-212	41
	♀	166.6	150-200	20
Sceloporus graciosus	♂	61.0	55-68	183
	♀	57.8	50-66	215
Sceloporus magister	♂	102.7	85-119	98
	♀	91.2	75-110	67
Sceloporus occidentalis	♂	74.5	65-88	354
	♀	70.9	60-82	188
Sceloporus orcutti	♂	102.5	90-115	99
	♀	94.0	85-106	64
Urosaurus graciosus	♂	55.0	45-68	210
	♀	52.3	45-62	196
Uta stansburiana	♂	51.5	45-60	227
	♀	49.2	43-58	144



*Colletes* and *Andrena* Eggs - 10 specimens

*Colletes* - 1 spec.

NONE

Possible: #86, May '61 (21)

*Andrena* - 4 spec.

#52, June '61, #9, June '61, #101, May '61,

#107, May '61, #108, June '61, #115, May '61,

#141, May '61.

*Diprion* - 1 spec. (8 Feb. 1961)

NONE

*Pyrausta* - 1 spec.

NONE

*Sceloporus* - 1 spec.

NONE

*Sceloporus* - 1 spec.

#178, June '61

Possible: #174, June '61 (19); #180, June '61

*Sceloporus* - 3 spec.

#456, May '61

Possible: #470, May '61 (21); #578, June '61

~~*Uma* - 1 spec.~~

~~NONE~~





~~UMA SCOPARIA - 5 mm.~~

~~# 229, May '60; # 230, May '60; # 243, May '60,  
# 257, Jun. '60~~

~~Possible: # 220, May '60 (+2); # 244, May '60  
(+5); # 262, Jun. '60 (+2)~~

UROSAURUS - 3 mm.

\* 121, Jun. '60 - although the egg is 3.2 mm.  
there is no notation that it is enlarged.

UTA STANS.

# 400, Apr. '54

Possible. # 37, Jul. '54 - the egg was in the  
left ovary, egg was in the right ovary  
only, so ovulation may not have  
occurred simultaneously.

# 355, Jun. '60 - enlarged egg in right  
ovary - two eggs in left ovary, one in  
right.



ENLARGED POST-ANAL SCALES  
IN ♀

[illegible]





Lizards Collected, 1958  
(No. dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus draconoides	6	6	12
Cnemidophorus tigris	2	2	4
Coleonyx variegatus	0	8	8
Crotaphytus collaris	1	1	2
Crotaphytus wislizeni	1	2	3
Dipsosaurus dorsalis	5	5	10
Gerrhonotus multicarinatus	0	1	1
Phrynosoma platyrhinos	2	0	2
Sceloporus graciosus	8	12	20
Sceloporus magister	2	2	4
Sceloporus occidentalis	17	14	31
Sceloporus orcutti	9	6	15
Uma inornata	11	20	31
Uma notata	18	11	29
Urosaurus graciosa	5	1	6
Uta stansburiana	<u>21</u>	<u>10</u>	<u>31</u>
Totals (16 species)	108	101	209



# Lizards Collected, 1959

(No. dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus draconoides	26	21	47
Cnemidophorus tigris	7	4	11
Coleonyx variegatus	40	32	72
Crotaphytus collaris	5	3	8
Crotaphytus wislizeni	8	8	16
Dipsosaurus dorsalis	56	24	80
Gerrhonotus multicarinatus	2	0	2
Phrynosoma coronatum	2	4	6
Phrynosoma m'calli	6	4	10
Phrynosoma platyrhinos	10	4	14
Sauromalus obesus	7	5	12
Sceloporus graciosus	39	22	61
Sceloporus magister	51	46	97
Sceloporus occidentalis	146	93	239
Sceloporus orcutti	48	28	76
Uma inornata	67	69	136
Uma notata	103	91	194
Uma scoparia	106	78	184
Urosaurus graciosus	38	19	57
Uta stansburiana	48	24	72
Totals (20 species)	815	579	1,394

{ 926 were in the 6 species of Sceloporus and Uma.  
 { 469 were in the remaining genera.



Lizards Collected, 1960  
(No. dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus draconoides	43	29	72
Cnemidophorus tigris	16	13	29
Coleonyx variegatus	48	45	93
Crotaphytus collaris	8	6	14
Crotaphytus wislizeni	11	10	21
Dipsosaurus dorsalis	173	104	277
Gerrhonotus multicarinatus	3	0	3
Phrynosoma coronatum	0	5	5
Phrynosoma m'calli	8	16	24
Phrynosoma platyrhinos	30	5	35
Sauromalus obesus	18	7	25
Sceloporus graciosus	9	13	22
Sceloporus magister	13	7	20
Sceloporus occidentalis	36	22	58
Sceloporus orcutti	6	7	13
Uma inornata	63	68	131
Uma notata	122	94	216
Uma scoparia	75	76	151
Urosaurus graciosa	44	43	87
Uta stansburiana	41	24	65
Totals (20 species)	766	594	1,360

Live Lizards on Hand (Nov. 15, 1960)

<u>Species</u>	<u>No. adults</u>	<u>No. juvenals</u>	<u>Species</u>	<u>No. adults</u>	<u>No. juvenals</u>
Dipsosaurus dorsalis	1	1	Uma notata	18	14
Gerrhonotus multicar.	0	1	Uma scoparia	8	14
Phrynosoma m'calli	0	10	Urosaurus graciosa	0	2
Sceloporus occidentalis	0	18	Totals	45	56
Sceloporus orcutti	0	1			73
Uma inornata	18	12			





Lizards Collected, 1961  
(No. dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus draconoides	16	16	32
Cnemidophorus hyperythrus	20	18	38
Cnemidophorus tigris	11	3	14
<b>Coleonyx</b> variegatus	59	42	101
Crotaphytus collaris	1	4	5
Crotaphytus wislizeni	5	11	16
Dipsosaurus dorsalis	115	57	172
Gerrhonotus multicarinatus	7	2	9
Phrynosoma coronatum	0	1	1
Phrynosoma m'calli	46	56	102
Phrynosoma platyrhinos	5	3	8
Sauromalus obesus	7	4	11
Sceloporus graciosus	35	23	58
Sceloporus magister	4	1	5
Sceloporus occidentalis	96	66	162
Sceloporus orcutti	67	38	105
Uma inornata	52	57	109
Uma notata	99	73	172
Uma scoparia	61	58	119
Urosaurus graciosus	61	49	110
Uta mearnsi	2	1	3
Uta ornata	6	2	8
Uta stansburiana	84	50	134
Xantusia henshawi	13	14	27
Totals (24 species)	872	649	1,521



Lizards Collected, 1962

(No. Dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
<i>Callisaurus draconoides</i>	30	22	52
<i>Cnemidophorus hyperythrus</i>	2	0	2
<i>Cnemidophorus tigris</i>	22	19	41
<i>Coleonyx variegatus</i>	22	19	41
<i>Crotaphytus collaris</i>	6	2	8
<i>Crotaphytus wislizeni</i>	18	15	33
<i>Dipsosaurus dorsalis</i>	96	56	152
<i>Gerrhonotus multicarinatus</i>	6	0	6
<i>Phrynosoma coronatum</i>	2	0	2
<i>Phrynosoma m'calli</i>	33	36	69
<i>Phrynosoma platyrhinos</i>	8	4	12
<i>Sauromalus obesus</i>	8	3	11
<i>Sceloporus graciosus</i>	84	73	157
<i>Sceloporus magister</i>	47	29	76
<i>Sceloporus occidentalis</i>	75	31	106
<i>Sceloporus orcutti</i>	4	3	7
<i>Uma inornata</i>	41	31	72
<i>Uma notata</i>	55	51	106
<i>Uma scoparia</i>	64	55	119
<i>Urosaurus graciosus</i>	56	61	117
<i>Uta ornata</i>	2	0	2
<i>Uta stansburiana</i>	36	31	67
<i>Xantusia henshawi</i>	4	6	10
Totals (23 species)	<u>721</u>	<u>547</u>	<u>1,268</u>





# Lizards Dissected, 1958-1962

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus draconoides	121	94	
Cnemidophorus hyperythrus	22	18	40
Cnemidophorus tigris	58	41	99
Coleonyx variegatus	169	146	
Crotaphytus collaris	21	16	37
Crotaphytus wislizeni	43	46	89
Dipsosaurus dorsalis	445	246	
Gerrhonotus multicarinatus	18	3	21
Phrynosoma coronatum	4	10	14
Phrynosoma m'calli	92	112	
Phrynosoma platyrhinos	55	16	71
Sauromalus obesus	40	19	59
Sceloporus graciosus	175	143	318
Sceloporus magister	117	85	
Sceloporus occidentalis	370	226	
Sceloporus orcutti	134	82	
Uma inornata	234	245	479
Uma notata	397	320	
Uma scoparia	306	267	
Urosaurus graciosus	204	173	
Uta mearnsi	2	1	3
Uta ornata	8	2	10
Uta stansburiana	230	139	
Xantusia henshawi	17	20	37
Totals (24 species)			5,780



Lizards Collected, 1963

(No. Dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus	11	10	21
Cnemid. hyperythrus	2	2	4
" tigris	9	8	17
Coleonyx	20	14	34
Crotaphytus wislizeni	4	8	12
Dipsosaurus	7	5	12
Gerrhonotus	2	—	2
Phrynosoma coronatum	2	—	2
" m'calli	5	6	11
" platyrhinos	6	1	7
Sauromalus	4	1	5
Sceloporus graciosus	135	87	222
" magister	1	—	1
" occident.	18	14	32
Uma scoparia	1	1	2
Urosaurus	15	17	32
Uta stans.	14	7	21

Total for 1963 = 437

Total (1958-1963) = 6217









R-371

STEEL BACKPLATE

S. E. & M. VERNON, INC.

U. S. A.



